TRANSFORMING FOR SUSTAINABILITY:

Driving Impact and Value through Supply Chain Action

CIIP Centre for Impact Investing and Practices

Despite businesses having plans for development and growth, the narrow profit margins leave little room to manoeuvre financially, even more so for smaller enterprises.

F&B MSME in Indonesia

Reducing costs in ESG practices carries more risks than increasing revenue due to potential failure... Another challenge is convincing shareholders to agree on the investment.

E&E MSME in Vietnam

We know why we should do sustainability, but don't know how.

F&B MSME in Malaysia

ESG is too high-up, not relevant to issues on the ground.

Tourism MSME in Malaysia

Investors feel secure when investing in companies that adhere to ESG standards. Conversely, if your tourism company lacks any standards, despite having capital, investors will not invest.

Tourism MSME in Vietnam

There are a lot of things [that are being measured]. Different reports are different, no one can agree on the standards, especially when venture funds use different reporting platforms.

Consumer goods MSME in Singapore

For me, I think it comes back down to people needing to see immediate benefits. People need to see the benefit for themselves – thinking of their children is way too far to project. There needs to be a tangible and immediate benefit. And right now I don't think there is one? And people can't see that. And that's the problem.

Consumer goods MSME in Singapore

There are many regulatory measures for our industry, such as waste management. If waste is not properly managed, it is immediately noticeable.

Tourism MSME in Vietnam

There are not enough standards or places where people can educate themselves about it.

E&E MSME in Singapore

Tak tahu hala tuju (translation: we don't know the direction), how to do step-by-step process, to get the certifications.

F&B MSME in Malaysia

The biggest challenge is personnel; we have no staff to research and develop a specific plan.

Tourism MSME in Vietnam

There are new opportunities to explore as we think about how we can help farmer incomes, incentivise sustainable initiatives, and support or finance the transition to lower carbon farming practices, perhaps through premium markets for low-carbon certified goods. It's a niche but growing market with many opportunities.

Julie Greene, Chief Sustainability Officer, Olam Agri

At Datai, we see sustainability initiatives as valuable investments in enhancing guest experience, business reputation and providing good return on investments. We work closely with our suppliers, such as chicken farmers and local suppliers for fruit and vegetables to help reduce our carbon footprints.

Remi Giromella, Director of Quality Control and Improvement, The Datai Langkawi

We've broadened our horizons to support 15 UN SDGs, and we collect data on over 250 ESG KPIs such as packaging waste from our Exclusive Brand products or data from our suppliers' social audits or environmental performance.

Sébastien Pivet, Chief Sustainability Officer and Quality Assurance Director, AS Watson Group

Because we have an OEM model when building our cars, we calculate carbon emissions from mining raw materials to Tier-3, Tier-2, and Tier-1. MSMEs have various levels of understanding of sustainability. To reduce our emissions numbers, we have to work with thousands of suppliers to make sure they understand this well.

Feng Shen, Executive Vice President and Chairman of Quality Management Committee, NIO Inc.

We have a tradition of paying for an audit for a business we don't control because we're so reliant on the deep supply chain. That kind of cooperation with partners is absolutely essential for us if we want to reduce our environmental footprint and improve our social footprint.

Vincent Stanley, Director of Philosophy, Patagonia

Because we supply to MNCs, we began our sustainability and traceability initiatives to ensure we had relevant certifications and train our suppliers. It just made operational and business sense.

Cynthia Handriani Wijaya, Chief Corporate Officer, Daya Selaras Group

Reducing emissions in our textile supply chain has the aim to enable business resilience, not just regulatory compliance. Our strict internal policies align with regulations and aim to go beyond what is required.

Andre Bilbao, Senior Vice President of Merchandising, Lidl & Kaufland Asia Pte. Limited

It doesn't have to be something big, like installing large machinery to save costs and energy, but even something the smallest enterprises can start on, such as saving electricity, water, and paper. We've seen awareness grow as more SMEs become familiar with sustainability topics and understand their importance.

Jaya Balan Kathiravalu, Head, SME Banking Malaysia, Group Commercial Banking, CIMB Bank

In addition to providing the capital for the right kind of equipment in the facility, we also provide tools, partnerships, and best practices to ensure that their supply chains are sustainable as well.

Rob Kaplan, Founder and CEO, Circulate Capital

Contents

Acknowledgements

We would like to thank all the organisations and individuals who have shared their time, energy, and insights with us. This report is the culmination of the collective wisdom and generosity of all who contributed to this study.

LIST OF PARTICIPANTS (IN ALPHABETICAL ORDER)

Investors and Financial Institutions

ABC Impact
ADB
ADM Capital
Amasia
ANEXT Bank
Beacon Fund
CapBay
CIMB
Circulate Capital
DBS
Do Ventures
East Ventures
Envisioning Partners
Funding Societies | ModalKu Group
HSBC
KoinWorks
LGT
Malaysia Venture Capital Management Berhad (MAVCAP)
Maybank
Mirova
MYSC
NIO Capital
OCBC
Olea
Rainmaking
Touchstone Partners
TradeFlow Capital
UBS
UOB

Government, Corporate Foundations, and Industry Associations

Apparel Impact Institute
B Corp Beauty Coalition
B Market Builder Southeast Asia
Enterprise Singapore
EuroCham Singapore
Federation of Livestock Farmers' Association, Malaysia
H&M Foundation
Indonesian Chamber of Commerce and Industry (Kadin)*
Malaysia Aquaculture Development Association
Malaysia Investment Development Agency
Malaysian Association of Tour and Travel Agents
Malaysia External Trade Development Corporation (MATRADE)
Malaysian Institute of Management (MIM)
Ministry of Agriculture and Food Security, Malaysia
Ministry of Tourism, Arts and Cultural, Malaysia
Malaysian Inbound Tourism Association
Malaysia Industrial Development Finance Berhad (MIDF)
National Tech Association of Malaysia (PIKOM)
Singapore Business Federation
Singapore Fashion Council
Singapore Manufacturing Federation
Singapore Tourism Board
SME Corp
Third World Network
World Travel & Tourism Council

Companies (MSMEs and MNCs)

25 Startups
AirAsia
AS Watson Group
Bain & Company
Changi Airport Group
Cyclect Group*
The Datai Langkawi
Daya Selaras Group
Destination Resorts and Hotels
Event Solution Travel Planner
Experior
FairPrice Group
Ghim Li Group
Haus Indonesia*
Hilton
Infineon
JFTech
Junglegold Bali
Klook
Lidl & Kaufland Asia Pte. Limited
Lucro
Malaysia Airlines Group
Malayan Flour Mills Berhad
Mana Ubud
Marriott
Mars
Maaza
Michelin
Mountain Hazelnuts*
NIO Inc.
NutriFood
Olam Agri
Ollo Lifestyle*
Opal Cosmetics*
OppStar
Panasonic

Patagonia
PepsiCo
POP SEA
Riyaz Group
SATS
Schneider Electric
Shermay's Singapore Fine Food
Srichakra Polyplast
Sunway Group
Tai Sin Group*
TATWIN
Thai Wah
Toll Group
UEM Sunrise
Vitasoy
ViTrox

Solution Providers

ALBA Singapore*
Apeiron Bioenergy
Aquila
ARCH
Arcstone
Asuene
Bababos
BUYO Bioplastics
Circ
Dat Bike
Ecoworks
ESGpedia Pte Ltd
enfarm*
GrowSari
GRST
H2
INFINICS
JALA*
Karo Sambhav
Kennemer Foods International
Koltiva
MET EV
Nandina REM
Pantas
Polymateria
Praktis
Proxtera
Re-mall
RESET Carbon
Selex
Stride*
Super
Sweetyet Development
Terracle
Tese
TreeDots
Unravel Carbon
VIOT
Winnow
Xinterra

*Insights provided from secondary sources

The core project team members are as follows:

CIIP

Dawn Chan, CEO
Jonathan Chan
Levonne Goh
Hiu Chii Fen
Akhil Khurana
Koh Lin-Net
Sharon Koh

We are grateful to Khazanah Nasional Berhad for their significant contributions to this study. Further, we extend our appreciation to PwC Singapore, RSM (in Indonesia, Malaysia, Singapore, and Vietnam), and Global Reporting Initiative (GRI) for their valuable contributions in validating the regulatory mapping affecting ESG practices across Asia and the EU. Their insights and expertise have strengthened the rigour of this study, ensuring a more comprehensive and accurate assessment of the evolving landscape.

We also thank Research For Impact (RFI) and the local research teams – Blackbox Research, Ernst & Young Malaysia, Indochina Research Limited and Katadata Insight Center – for their strong support in conducting MSME surveys and roundtable discussions across Southeast Asia. The substantial MSME insights included in this report were made possible because of their efforts in data collection and analyses.

Finally, we are grateful to all who have provided support at various stages of this study, including interns Natalie Chew, Bryan Kee, Rachel Lim, Juni Ong, Jayati Rathi, Chu Ting Tan, and Joanne Tan for their extensive research and thorough analysis. We are also thankful for the collective support of the Temasek Trust Ecosystem especially ABC Impact, and colleagues at Temasek for their steadfast support.

List of Acronyms

Acronym	Definition
ACCMSME	ASEAN Coordinating Committee on Micro, Small and Medium Enterprises
APAEC	ASEAN Plan of Action for Energy Cooperation
ASEAN	Association of Southeast Asian Nations
BPS	Badan Pusat Statistik (The Central Statistics Agency, Indonesia)
CPG	Consumer packaged goods
CPI	Consumer Price Index
CSDDD	Corporate Sustainability Due Diligence Directive
CSOaaS	Chief Sustainability Officer-as-a-Service
CSRD	EU Corporate Sustainability Reporting Directive
DFC	U.S. International Development Finance Corporation
E&E	Electrical and Electronics
ESG	Environmental, social and governance
EU	European Union
EUDR	EU Regulation on Deforestation-Free Products
F&B	Food and Beverages
FLEG	Forest Law Enforcement and Governance
IFC	International Finance Corporation
ISSB	International Sustainability Standards Board
JCI	Jakarta Composite Index
MNC	Multinational corporation
MSME	Micro-, small-, and medium-enterprises
ODM	Original Design and Manufacture
OEM	Original Equipment Manufacturer
SEDG	Simplified ESG Disclosure Guide
SME	Small and medium-sized enterprise
UN	United Nations
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WTE	Waste to Energy

Executive Summary

01 Southeast Asia's role in supply chains is evolving from a low-cost export hub to a strategic supply chain powerhouse. Micro-, small, and medium enterprises (MSMEs) play a crucial role in this evolution.

Southeast Asia is emerging as a strategic growth region, both as a production base and a consumer market, even amidst an increasingly volatile global regulatory and trade environment.

MSMEs are vital to Southeast Asia's economy especially in the **consumer goods, food and beverage (F&B), electrical and electronics (E&E), and tourism** sectors. MSMEs contribute 85% of the region's employment and drive economic and social development in both rural and urban areas.[1] They drive innovation and inclusive growth, supporting long-term, sustainable economic development and helping to narrow development gaps in the region.

MSMEs in Southeast Asia have the potential for more, not only by serving local companies but also by accessing international markets. However, to capitalise on these opportunities, MSMEs will need to address growing sustainability expectations.

While global attention has been focused on major actors, such as countries and large multinational corporations (MNCs), MSMEs in Southeast Asia must also adapt to evolving sustainability standards to maintain their position in global supply chains. Implementing these practices will be critical for securing their place in international markets and sustaining long-term growth, while also helping MSMEs manage rising costs driven by climate change.

38%
of global exports by value in 2024 came from Asia and the Pacific, with Southeast Asia recording the highest real-term trade expansion at 5.8%[2]

ASEAN exports
are expected to grow at three times the projected global trade growth rate, reaching more than US$3 trillion by 2031[3]

20%
surge in foreign direct investment for greenfield manufacturing in Southeast Asia between 2019 and 2023[4]

330 million
middle- and upper-middle-income consumers in the region in 2024. This number is projected to grow to 415 million by 2030[5]

1 ASEAN Secretariat (2025): Development of Micro, Small, and Medium Enterprises (MSMEs) in ASEAN.
2 UNESCAP (2025): Asia-Pacific Trade and Investment Briefs 2024/5: Regional growth outperforms global average.
3 HSBC (2024): Wholesale trade in ASEAN: Fuelling regional commerce and economic integration.
4 McKinsey (2024): Diversifying global supply chains: Opportunities in Southeast Asia.
5 BCG (2024): The Next Chapter: Decoding The Future Of FMCG In Southeast Asia.

02 Despite uncertainties regarding possible delays or even rollbacks of sustainability regulatory requirements, MNCs are already taking action. This has important implications for their MSME suppliers.

For MNCs, implementing sustainable practices is a long-term commitment. This typically takes anywhere from a few months for basic compliance measures, to 1 to 5 years for complex practices like carbon footprint reduction.

Many MNCs surveyed have already adopted a zero-tolerance policy, removing suppliers that pose a risk to their net-zero goals.[6]

As emissions from Scope 3 activities can account for up to 90% of a company's emissions,[7] regulations are increasingly requiring full traceability. MNCs may deal primarily with their Tier-1 suppliers and may not have sight to the MSME suppliers in the deeper tiers today, but will increasingly need to reach these tiers.

In response, governments in Southeast Asia are establishing their national regulations, such as the Simplified ESG Disclosure Guide (SEDG) launched by Capital Markets Malaysia in October 2023, and the Singapore-Asia Taxonomy for Sustainable Finance launched in December 2023.

Image © Daya Selaras Group

6 Standard Chartered (2021): Carbon Dated.
7 McKinsey (2024): Tackling Scope 3 emissions through supplier collaboration.

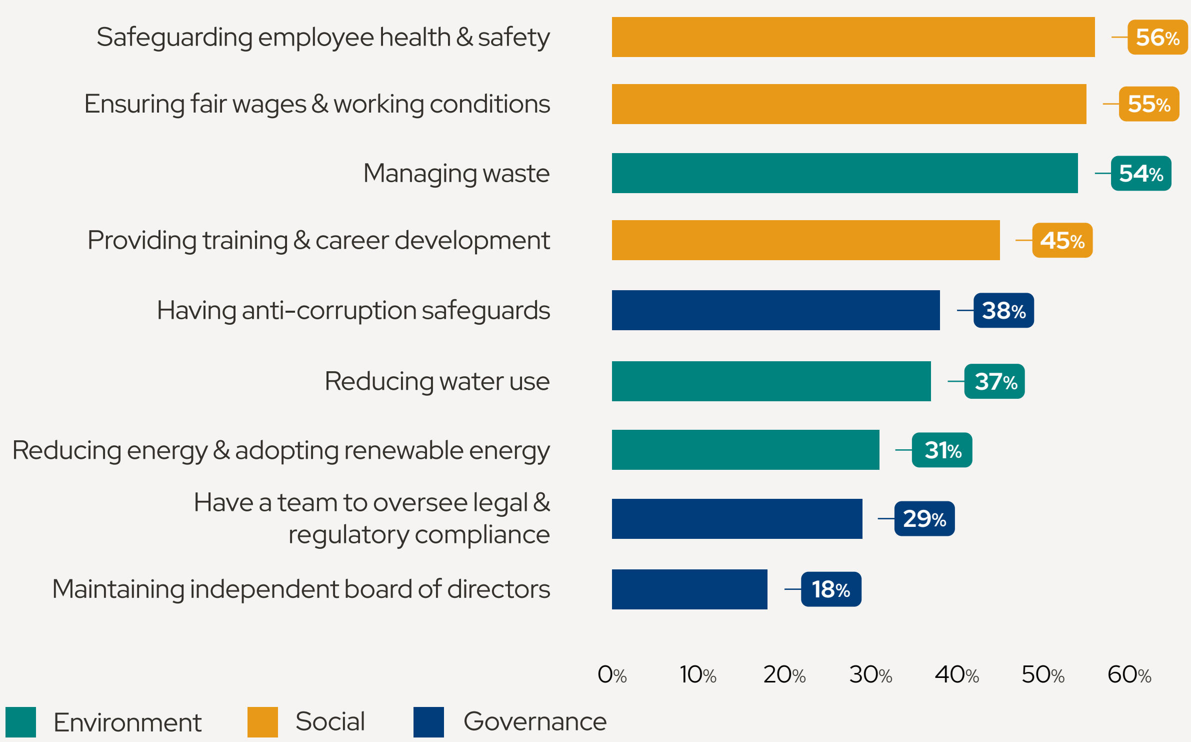
03 MSMEs in Southeast Asia are already starting to implement sustainable practices.

Climate change is becoming increasingly evident through rising temperatures, extreme weather events, and environmental degradation, making sustainable practices no longer esoteric or limited to developed markets.

Our survey of more than 3,500 MSMEs across Indonesia, Malaysia, Singapore, and Vietnam revealed that 84% of MSMEs have already adopted at least one sustainable practice, across environmental, social and governance (ESG) dimensions.[8]

Among the ESG dimensions, MSMEs tended to implement more social practices compared to environmental and governance practices, with the exception of waste management. This is a reflection of mandated social and employee protection landscape in each country, and the region's concerns around waste management.

Figure 1: Basic ESG practices among SMEs across Indonesia, Malaysia, Singapore, Vietnam



Weighted sample: n = 3,512 | **Survey question:** Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact 2) increase its social impact, and 3) ensure its good governance? | **Note:** Figures have been rounded to the nearest whole number.

8 For purposes of this study, we identified a list of 21 sustainable practices, and mapped them across environmental, social and governance (ESG) dimensions. Throughout the report, we refer to these as ESG practices.

04 For MSMEs, market-based motivations, particularly cost savings, outweigh regulatory considerations when adopting sustainable practices. Lowering costs is a stronger motivator than increasing demand.

Across all four countries covered in this study, 39% of MSMEs cited lowering costs and increasing long run efficiency as key reasons for their sustainability efforts. This suggests that while MSMEs may aim to meet increased demand or gain new clients through sustainable practices, the uncertainty around these outcomes means that improving operational efficiency and competitiveness remains a more stable and tangible motivation.

The anchoring of ESG practices on cost saving considerations means that once an MSME has implemented the practice, it will be less likely to be reversed, creating pressure for other MSMEs to follow suit.

05 ESG awareness and adoption differences vary significantly by country, more than by industry or size, but all countries face challenges in getting MSMEs more ESG ready.

While ESG awareness and adoption are influenced by multiple factors, our data reveals that country-specific conditions drive the most significant variation, highlighting the need for tailored action based on local needs.

45% of MSMEs surveyed said their primary source of sustainability or ESG guidance was government bodies, with industry bodies and trade associations coming in at a close second at 34%.

While ESG familiarity is notably higher in countries such as Singapore (99% moderately/very familiar) and Vietnam (75% moderately/very familiar), MSMEs in all countries fall short in terms of ESG practice adoption.

Image © Mirova, Mountain Hazelnuts

06 MSMEs need to do more. MSMEs are falling short in implementing 'basic' ESG practices, which are basic risk mitigation measures. Even fewer MSMEs have implemented 'good' practices, which align closer to MNC supplier codes of conduct.

We considered that some MSMEs might have implemented ESG practices without realising their connection to the concept of ESG. Hence, we drew up a list of 21 practices, and asked MSMEs for their responses to these practices. When analysing the responses, we also classified the practices according to "basic", "good" and "progressive".

Of the 21 ESG practices we studied, five are basic practices which are regulatory requirements in all four countries studied.

Based on our survey, only a small percentage of MSMEs across all countries are implementing all five practices, putting them at risk as local and international regulators and clients tighten enforcement.

Figure 2: Understanding Basic, Good, and Progressive Approaches

Active shaping (beyond adoption)

Progressive practices

4 practices covered in our survey

Practices that involve full integration of ESG into the strategy and operations of an MSME.

Active adoption

Good practices

7 practices

Substantive efforts, mostly outside the MSME's core business, often driven by MNC requirements and supply chain standards.

Passive adoption

Basic practices

10 practices

Practices that are basic risk mitigation and regulatory requirements in at least two of the four countries studied.

Basic ESG practices common in the regulations of all four countries we studied:

- Reduce and dispose of waste properly
- Ensure fair wages and working conditions without discrimination
- Safeguard employee health and safety
- Have anti-corruption standards
- Have a team to oversee compliance with laws and regulations

07 MSMEs want to do more. They are recognising the inherent business benefits of adopting sustainability practices, and are hence increasingly interested in adopting these practices.

We asked MSMEs for the key factors which would drive their adoption of ESG practices in future and found that market-driven factors continued to be a larger consideration than the need to comply with regulations.

However, while reducing costs and improving long-term efficiency (39%) remain the primary motivations, MSMEs also identify meeting customer demand (33%), entering new markets (27%), and attracting talent (27%) as key factors driving future adoption.

This represents an opportunity to bring about more partnerships between MNCs and MSMEs

At the same time, while many MSMEs report serving large corporations, multinational companies, or participating in regional and global supply chains, they remain equally embedded in local supply chains, often selling to local end customers and other local MSMEs. Crucially, this reveals how MSMEs must often navigate competing demands from both global and local markets. The diversity of their customer base influences their strategic choices, which in turn are reflected in their survey responses in our study.

39%

of MSMEs identified reducing costs and improving long-term efficiency as their primary motivations

Image © GRST

08 There have been many initiatives aimed at encouraging MSMEs to adopt ESG practices, but we need to move beyond broad strokes to advance further. MSMEs need practical, constructive assistance at the ecosystem and sectoral levels to drive meaningful change.

Advancing MSMEs to the next level of ESG adoption requires coordinated efforts from governments, industry associations, MNCs, investors, and financial institutions. The challenge lies in ensuring that all parties move in tandem and function as a cohesive ecosystem. Individual efforts may struggle to gain traction unless supported by aligned action from other key players. This is even more critical in today's volatile global regulatory and trade environment.

Sectoral champions are crucial for aligning efforts. MSMEs face significant challenges, including limited in-house expertise, low ESG awareness, high implementation costs, difficulties hiring staff for sustainability and ESG roles, and collecting accurate data for measurement and reporting. These issues can be effectively tackled only at the sectoral level, where the unique sector characteristics can be properly identified and addressed with tailored solutions.

Stakeholder Roles in Advancing MSME ESG Adoption

Governments play a key role in advancing ESG adoption through both financial and non-financial initiatives such as clearer regulations, streamlined permits, tax incentives and grants.

Industry associations are important partners to governments. MSMEs look to governments and industry associations for clear guidelines and knowledge-sharing to navigate ESG requirements.

Corporate clients influence ESG adoption by offering preferential contracting terms, such as longer-term contracts, higher prices, and favourable payment terms, which have a direct impact on improving MSME cash flow and enabling investment in sustainable practices.

Technology and solution providers enable MSMEs to adopt ESG practices through innovative solutions like material innovation, carbon accounting, and traceability tools, helping improve efficiency and meet client and regulatory expectations.

Investors, including impact investors, can accelerate ESG uptake and lower costs by investing in new business models and technologies, and encouraging solution providers to lower costs by developing customised, sector-specific tools that MSMEs can realistically implement.

Financial institutions are pivotal in supporting MSMEs through favourable loan terms, grants and simplified processes for ESG-related financing that address sector-specific needs and priorities.

09 Recommendations to shape ecosystem actions

To address the challenges above, organisations such as government agencies, industry associations, MNCs, financial institutions, and solution providers have to join hands to raise ESG awareness and adoption among MSMEs. There is no silver bullet, and no one-size-fits all solution.

We need to do more of the following:

- **Make ESG clear and simple**
- **Build capacity, both internal and external**
- **Encourage more win-win customer-supplier partnerships**
- **Invest in innovative, MSME-targeted solutions**
- **Finance the change**

It will take a community to support each MSME. The continued sustainable growth of MSMEs in the region is crucial for economic expansion and employment. Increased volatility and unpredictability in the global markets will mean that **business resilience and the ability to expand customer reach will become ever more essential**. Each stakeholder plays a **vital role in the ecosystem, to support each other and especially the MSMEs through looming periods of economic difficulty**.

Together, we can take action to ensure that these vital businesses are equipped to succeed in the evolving supply chain landscape.

Introduction

Why this Study

3,512	22	85
MSMEs surveyed	roundtable discussions with 86 MSMEs	MNCS, solution providers and enablers interviewed

Supply chains and MSMEs are huge topics that have been the subjects of extensive study, especially during the COVID-19 pandemic and amidst present volatility in global trade. When factoring in intersections with sustainability issues and concerns, this introduces another layer of sprawling complexity.

The Centre for Impact Investing and Practices (CIIP), a non-profit entity established by Temasek Trust, embarked on this report to study the role of Southeast Asian MSMEs in global supply chains. Throughout the course of this study, CIIP engaged and sought the views of Khazanah Nasional Berhad as **we have a shared interest in understanding the challenges faced by MSMEs in a world where sustainability considerations have become increasingly important**. Yet, they are not getting any easier to navigate, especially for resource-stretched MSMEs.

This report is the second of a comprehensive two-part study, building on the foundational report prepared by CIIP and PwC Singapore, **"It takes a community": Enabling SME resilience in FMCG supply chains** published in April 2024.[9] The first report focused on how SMEs in the fast-moving consumer goods (FMCG) sector from Indonesia, Malaysia, and Singapore were addressing sustainability-related challenges.

This second report expands the scope by covering additional sectors namely consumer goods, food and beverage, electrical and electronics, and tourism, and extending the geographic reach to include Vietnam. This study leverages surveys that CIIP commissioned over the course of 2024 to gather detailed insights from MSMEs involved in global supply chains on key aspects of sustainability adoption, including current practices, drivers, challenges, and support needs. The study also reflects feedback from MNCs, industry associations, solution providers, and other key stakeholders.

The aim is to provide a more comprehensive understanding of the sustainability challenges facing MSMEs and to identify practical solutions to strengthen their resilience in global supply chains.

9 CIIP and PwC Singapore (2024): Enabling SME resilience in FMCG supply chains.

While ESG and sustainability are distinct concepts, the lines between them are often blurred, especially in discussions about how ESG adoption contributes to sustainability outcomes. Sustainability is generally understood as a long-term commitment to building resilience, adapting to climate challenges, and driving systemic transformation. ESG, in contrast, is often associated with regulatory compliance, risk disclosure, or basic reporting requirements. Even so, for many MSMEs, ESG serves as a practical and necessary starting point in their broader journey toward sustainability. Understanding what motivates these efforts, where the gaps lie, and how practices are evolving is essential to supporting their growth and long-term impact. Developing this understanding has been hindered by the vast number of MSMEs operating across diverse markets, the complexity of their challenges, and the difficulty of obtaining a sufficiently large and representative sample. Additionally, differences in MSME definitions across countries further complicate cross-border comparisons,[10] contributing to a **large evidence gap in the region**.

This report aims to bridge part of this gap by presenting findings from surveys of **3,512 MSMEs**, as well as qualitative insights from **22 roundtable discussions with 86 MSMEs** across Indonesia, Malaysia, Singapore, and Vietnam. These are complemented by interviews with **85 MNCs, solution providers, and enablers**.

With this deeper understanding of the challenges faced by MSMEs, we can better identify and collaborate with the key stakeholders to support MSMEs on their sustainability journeys, with the ultimate aim of strengthening business and supply chain resilience amidst changes in the global regulatory and trade environment.

10 ASEAN (2019): ASEAN Strategic Action Plan for SME Development 2016-2025.

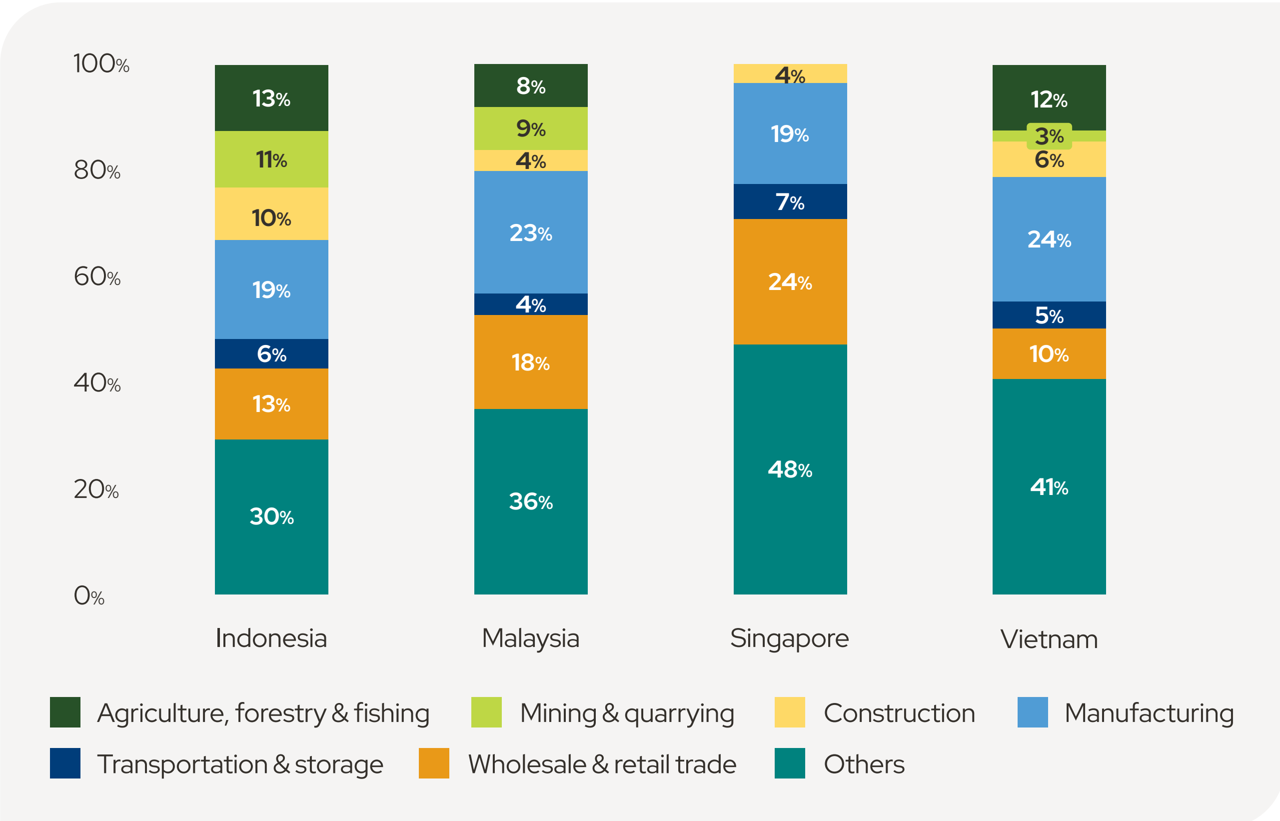
Research Approach

COUNTRY AND SECTOR COVERAGE

This study explores how MSMEs in **Indonesia, Malaysia, Singapore, and Vietnam** adopt ESG practices and principles across four key sectors: **consumer goods, food and beverage, electrical and electronics, and tourism**. These countries and sectors were selected due to their economic significance, supply chain integration, and distinct policy and market conditions related to ESG, offering a representative view of sustainability transitions in Southeast Asia.

The selection of these countries is also shaped by their industrial and economic composition, which underscores the importance of MSMEs in key sectors. **Across Indonesia, Malaysia, and Vietnam, agriculture and manufacturing together contribute approximately 31 to 36% of GDP, highlighting their economic significance.**[11] Although Singapore does not have a notable agricultural sector, its 18.6% GDP share in manufacturing and heavy reliance on international trade makes it integral to shaping sustainable supply chains across the region. Tourism contributes 5–12% of GDP across these four markets, with its economic impact varying by country.[12]

Figure 3: GDP contribution by key sectors across Indonesia, Malaysia, Singapore, and Vietnam (%)



Source: ASEANstats (2023)[13]

11 ASEANstats (2023): ASEAN Gross Domestic Product.
12 ASEAN (2024): ASEAN Business Sentiment Survey 2020/2021- Tourism Sector.
13 ASEANstats (2023): ASEAN Gross Domestic Product.

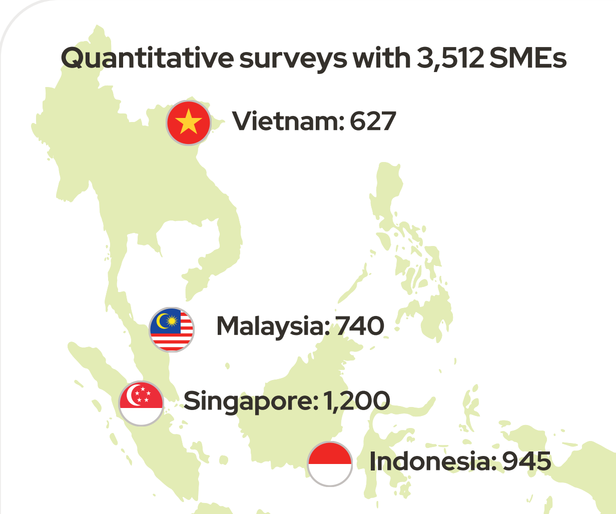
MSMEs are defined according to each country's official definitions as below:

	Micro	Small	Medium
	▶ Capital ≤IDR1bn OR annual sales ≤IDR2bn	▶ Capital ≤IDR5bn OR annual sales ≤IDR15bn	▶ Capital ≤IDR10bn OR annual sales ≤IDR50bn
	▶ Sales turnover <RM300k OR <5 employees	Manufacturing: ▶ Sales turnover <RM15mn OR <75 employees Services: ▶ Sales turnover <RM3mn OR <30 employees	Manufacturing: ▶ Sales turnover ≤RM50mn OR ≤200 employees Services: ▶ Sales turnover ≤RM20mn OR ≤75 employees
	▶ Operating revenue ≤SGD1mn	▶ Operating revenue ≤SGD10mn	▶ Operating revenue ≤SGD100mn OR ≤200 employees
	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND3bn revenue ▶ ≤VND3bn total capital ▶ ≤10 employees Trade & services: ▶ ≤VND10bn revenue ▶ ≤VND3bn total capital ▶ ≤10 employees	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND50bn revenue ▶ ≤VND20bn total capital ▶ ≤100 employees Trade & services: ▶ ≤VN100bn revenue ▶ ≤VND50bn total capital ▶ ≤50 employees	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND200bn revenue ▶ ≤VND100bn total capital ▶ ≤200 employees Trade & services: ▶ ≤VND300bn revenue ▶ ≤VND100bn total capital ▶ ≤100 employees

While we recognise considerable variation in MSMEs definitions across countries and potential issues with standardisation, these definitions have been adopted for the purposes of this study. This approach recognises that alignment with national frameworks in classifying and targeting MSMEs is necessary to better shape key recommendations suited to local contexts and realities.

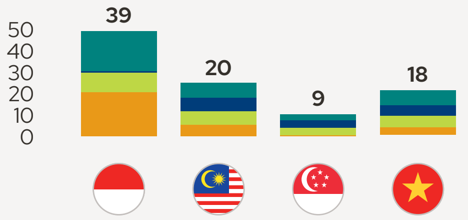
Figure 4: Survey methodology and SME sample overview

Quantitative surveys with 3,512 SMEs



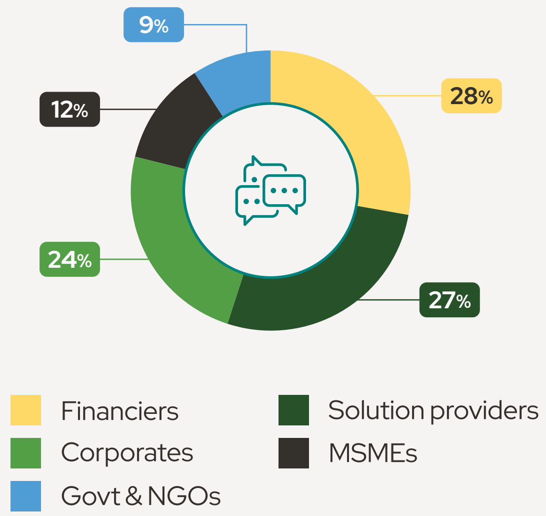
Ground sentiments collected from 86 MSMEs across 22 Focus Group Discussions

of MSMEs that participated in FGDs



Consumer Goods	7	5	3	4
Food & Beverage	17	5	1	4
E&E	1	5	3	4
Tourism	14	5	2	6

Qualitative inputs from interviews with ~85 MNCs, solution providers and enablers



MIXED METHOD APPROACH

Our study employed a mixed method approach, combining desk research, quantitative surveys, qualitative interviews, and participatory roundtable sessions. This comprehensive and multi-dimensional methodology was necessary to capture the complexity of ESG adoption among MSMEs, as neither quantitative nor qualitative methods alone would have been sufficient. The firm-level survey provided a statistically robust data source for identifying ESG adoption patterns, barriers, and enablers across sectors.

However, survey data alone does not capture the strategic, operational, and regulatory nuances that shape ESG decision-making. Roundtable sessions and qualitative interviews validated the findings and translated them into actionable recommendations across policy, industry, and market realities. By integrating these methods, the study balances breadth and depth, capturing both macro-level trends and firm-level perspectives to inform ESG strategies within global supply chains with a high degree of contextualisation.

SURVEY

Our study focused on MSMEs, many of which had international orientations, as those with cross-border exposure are more impacted by sustainability and ESG considerations. **Firms were included in the survey if they met the respective country definitions of "MSMEs" and were primarily engaged in business-to-business (B2B) activities with international or export-related operations**, with exceptions noted below.

The MSMEs identified for our study mostly had primary business operations in manufacturing or processing within their respective industry sectors. The exception was tourism, which is the only sector where we included MSMEs that also cater to direct service provision. The MSMEs were excluded if they solely provide ancillary services, such as marketing, logistics, and distribution, as they are not directly involved in the final product or service. All survey data were self-declared by MSME respondents.

This criterion ensures the study's relevance to global supply chains and the broader implications of ESG adoption beyond domestic markets. Export-oriented MSMEs face strict international sustainability regulations, investor scrutiny, and corporate ESG commitments, and are a critical group for understanding compliance-driven and market-led sustainability shifts. Furthermore, B2B firms, particularly those supplying multinational corporations, face stricter ESG expectations than purely domestic or business-to-consumer (B2C) enterprises, positioning them as a key segment for assessing how sustainability standards are transmitted across supply chains.

Various sampling and analytical approaches were adopted to strike a balance between practical data collection processes, statistical power, and sectoral representation, with local survey partners conducting data collection and adhering to within-country guideline quotas for sector and relative market share for firms in the target size category, with a minimum target of 30 MSMEs per group. See Figure 5 below for profile of organisations surveyed.

Figure 5: Profile of organisations surveyed

Total number of MSMEs' that responded:

3,512

34.3%
1,203 Micro enterprises

51.5%
1,810 Small enterprises

14.2%
499 Medium enterprises

The survey questionnaire was designed to fill critical evidence gaps in understanding ESG adoption among MSMEs, particularly regarding the barriers, enablers, and future trajectories of sustainable practices. We asked questions to:

- **Assess current levels of ESG awareness among MSMEs,** given that many operate with limited exposure to sustainability regulations and best practices.
- **Identify the specific ESG practices MSMEs are implementing—or failing to implement—** to understand which areas are seeing progress and where adoption remains low.
- **Examine the key barriers preventing MSMEs from adopting ESG practices,** recognising that financial, technical, and operational constraints vary by sector and firm size.
- **Determine the factors that drive MSMEs toward ESG adoption,** distinguishing between regulatory compliance, market incentives, and intrinsic business benefits.
- **Indicate current and potential avenues of support and incentives** that would help MSMEs implement ESG practices.
- **Explore MSMEs' plans for the future** for implementing ESG practices.

Image © Tim Davis/Patagonia

To better understand the relative depth of ESG implementation, we surveyed MSMEs about their ESG practices classified according to:

- **"Basic"** (practices that are basic risk mitigation and regulatory requirements in at least two of the four countries studied),
- **"Good"** (substantive efforts, mostly outside of core business, often driven by MNC requirements and supply chain standards), and
- **"Progressive"** (practices that involve full integration of ESG into strategy and operations).

Figure 6: ESG practices classified into tiers based on cost of implementation and impact

	Environment 7 practices	Social 7 practices	Governance 7 practices
Basic (10 practices) Foundational risk mitigation measures, some of which may be mandated by regulations	▶ Reduce water use ▶ Reduce and dispose of waste properly (including recycling) ▶ Reduce carbon and other gashouse gas emissions ▶ Reduce energy use, including adopting renewable energy	▶ Ensure fair wages and working conditions without discrimination ▶ Provide employees with training and career development ▶ Safeguard employee health and safety	▶ Maintain an independent board of directors ▶ Have anti-corruption safeguards ▶ Have a team to oversee compliance with laws and regulation
Good (7 practices) Substantive efforts, mostly outside the MSME's core business, often driven by MNC requirements and supply chain standards	▶ Protect nature and biodiversity ▶ Source for sustainable suppliers	▶ Provide insurance coverage to employees ▶ Track and ensure customer satisfaction	▶ Have women in senior management or leadership ▶ Have external auditor/ audit committee ▶ Have cybersecurity or data protection safeguards
Progressive (4 practices) Practices that involve full integration of ESG into the strategy and operations of an MSME	▶ Develop environmentally friendly products (including recyclables)	▶ Provide payment options and emergency advances to employees ▶ Support the well-being of local communities	▶ Publish report on ESG practices

While every effort has been made to ensure the comparability of data across all four countries, variations in respondent profiles, sectoral representation, and local market conditions may have influenced the findings. These contextual differences should be considered when interpreting the results.

INTERVIEWS

In addition to survey findings, this study incorporates insights from large multinational and domestic corporations, startups, financial institutions, and ecosystem enablers to provide a comprehensive perspective on ESG adoption and supply chain resilience. These organisations were selected based on their roles in shaping industry standards, financing sustainability transitions, and driving operational change across supply chains. By engaging corporates, we examined how Tier-1 supplier oversight, deep-tier solutions, and sustainability initiatives influence supply chain practices. Startups were included for their role in advancing digital traceability and circular economy solutions, while financiers provided insight into how ESG metrics impact capital allocation. Industry associations and policymakers contributed perspectives on regulatory challenges and support mechanisms.

Interviews were conducted through in-depth management discussions including site visits across Indonesia, Malaysia, Singapore, and Vietnam. These discussions shed light on the practical realities of ESG integration, highlighting both structural challenges and emerging best practices. By synthesising insights across these stakeholder groups, the study offers a nuanced understanding of how sustainability considerations are shaping MSME participation in global value chains.

INTENDED AUDIENCE

Achieving meaningful progress in ESG adoption and supply chain transformation requires coordinated efforts across the ecosystem, ensuring that sustainable practices are embedded at scale. Hence, this study is designed for a wide range of audiences, covering businesses, investors, policymakers, and MSMEs seeking to accelerate ESG adoption and supply chain resilience in Southeast Asia. This study aims to inform stakeholders across these groups, providing insights that can support more aligned action and collective impact. We have sought to provide practical insights and real-world case studies that demonstrate how ESG integration can drive both sustainability and business growth.

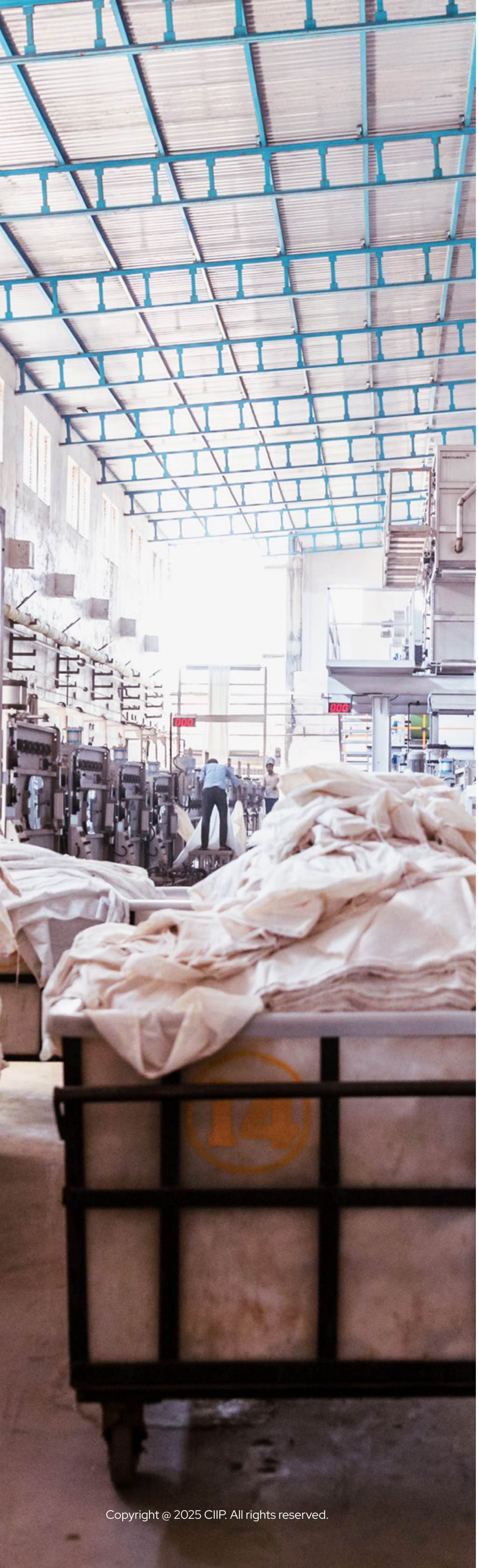
LIMITATIONS TO THE STUDY

This study aims to provide a comprehensive view of ESG adoption among Southeast Asian MSMEs and the role of ecosystem stakeholders in strengthening supply chain resilience. However, several limitations should be noted:

Firstly, the geographic scope of this study is not exhaustive. While it covers key markets in Southeast Asia, including Indonesia, Malaysia, Singapore, and Vietnam, it does not represent all countries in the region. Insights from countries not included in this study may differ, and future research could expand coverage to provide a more complete regional perspective.

Secondly, the study's methodology has several limitations.

Firstly, MSME definitions differ significantly across the countries surveyed. This presented challenges during analysis and reporting, as variations in criteria meant that cross-country comparisons were not directly feasible. Due to these differences in definitions, our study's comparisons across markets should be interpreted with these differences in mind.



Secondly, given the multi-country scope of our research as well as differences in how MSMEs are organised across markets, data collection through the MSME survey was carried out in each country with different methods. This has yielded results that showcase the diversity of MSMEs across countries, sectors, size, and export-orientation. The ratio of micro-, small-, and medium-enterprises based on local market demographics was determined as such:

	Sector quotas were guided by GDP contributions, with F&B, tourism, and E&E sectors using official data. For consumer goods, estimates were derived from household spending, CPI weights, and market capitalisation share in the Jakarta Composite Index as compared to F&B. MSME size distribution followed national statistics, with micro enterprises comprising over 99% of the total.
	Sampling was based on MSME proportions from the 2015 Economic Census. Micro and small enterprises made up the majority, in line with national data. Due to the lack of official data by sector, an equal representation approach was applied across the four sectors.
	The sample was stratified by sector and enterprise size using data from the Department of Statistics. Sector quotas were estimated based on each industry's contribution to GDP due to limited data on business counts. Business size distribution reflected national patterns, with 90% of respondents representing micro and small enterprises.
	Sampling used data from the General Statistics Office and Vietnam Business Annual Report, proportionally representing micro, small, and medium enterprises. Sectoral allocations were adjusted for complexity and diversity, particularly in F&B, Consumer Goods, and E&E.

Additionally, while the quantitative survey provides valuable insights into MSME ESG adoption, it is based on self-reported data, which may introduce response bias. While statistical techniques were applied to ensure data reliability, all findings should be interpreted with this in mind. Moreover, our qualitative research, through roundtables and interviews, offers depth and contextual nuance but may not fully capture diverse experiences across industries and firm sizes.

Lastly, the study focuses on MSMEs involved in manufacturing and processing, with tourism as the only sector involving direct service provision to end customers. MSMEs providing ancillary services, such as marketing, logistics, and distribution, were excluded. Hence, our findings should not be seen as reflections of ESG adoption dynamics among MSMEs in service-based industries.

Despite the methodological challenges, the findings presented in this report offer valuable representative insights into the lived realities of MSMEs, the complex environments they operate in, and strategic decisions as a result. Acknowledging these ground-level realities is critical for informing more nuanced and effective policy and programme interventions across countries.

What this Report Covers

This report analyses **ESG adoption among MSMEs and the role of supply chain stakeholders** in strengthening sustainability across Southeast Asia, through the following:

In chapter 1, we outline the **role of MSMEs in Southeast Asia's economy and global supply chains**, illustrating the **climate change risks and regulatory landscapes** affecting MSMEs, even amidst ongoing tensions in the global tariff environment at time of writing. We highlight why action needs to be taken across value chains and the impact of sustainability requirements on MSMEs.

In chapter 2, through the **findings of our MSME survey**, we examine how MSMEs in Southeast Asia are **implementing ESG practices, detailing their motivations, the role they play in addressing sustainability risks, and the foundations they need to establish for effective ESG adoption**. We also discuss current ESG implementation trends, key challenges, and future outlooks.

In chapter 3, we provide **recommendations for strengthening ESG adoption through an ecosystem approach**, recognising that supply chain transformation cannot happen in isolation. These recommendations offer a strategic foundation before the sector deep dives, outlining key enablers such as corporate-supplier partnerships, financing, and policy support.

In chapters 4 to 7, we offer **sectoral deep dives into the consumer goods, food and beverage (F&B), electrical and electronics (E&E), and tourism sectors**, examining industry-specific opportunities, the challenges MSMEs in these sectors face in adopting ESG practices, and the financial support and incentives they seek to enable this transition. These chapters also explore how MNCs and large corporates increasingly view ESG as a minimum requirement, shaping the way MSMEs position sustainability within their business strategies. The findings reinforce the need for collaborative action to enable meaningful and scalable change.

To conclude, we distill insights from our report and indicate how the industry can work together to drive forward supply chain sustainability in Southeast Asia.

The report is supported by a series of Annexes, which detail the research methodology, sampling strategy, and survey quality checks to ensure transparency and robustness in the study's findings.

01
The Role of MSMEs in Southeast Asia

Southeast Asia in Global Supply Chains

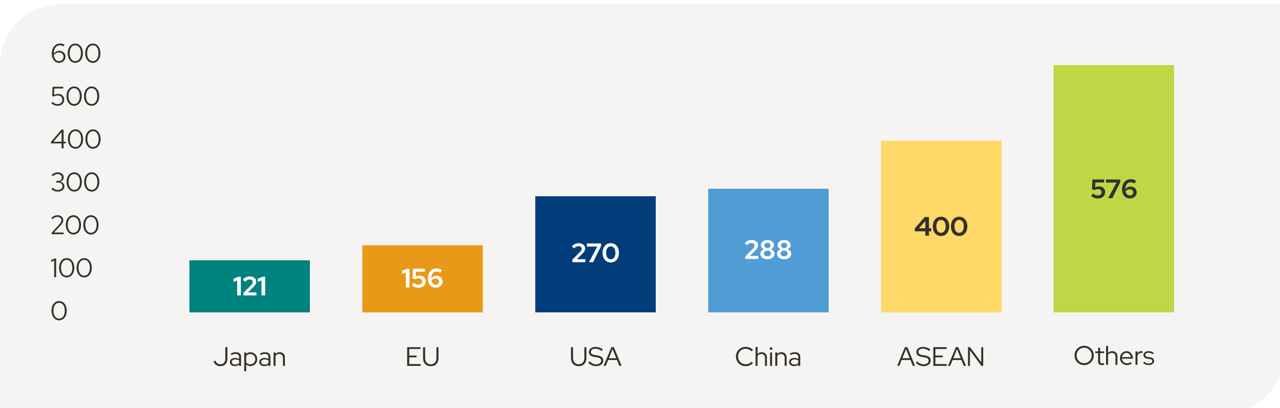
Southeast Asia is experiencing significant growth both as a production base and consumer market, driven by global supply chain reconfigurations in response to shifting trade policies, as well as demographic and consumption trends. These trends look set to hold even amidst the increased volatility introduced by sweeping new changes in the global trade environment. However, this growth is also accompanied by increasing pressures for more sustainable practices.

As a production base, Southeast Asia with its improving infrastructure and youthful and expanding workforce has been a key location for manufacturing.[14] Foreign direct investment in greenfield manufacturing in Southeast Asia increased by about 20% between 2019 and 2023, against a contrasting 17% decline in China over the same period.[15] The region's exports grew at a compound annual growth rate (CAGR) of approximately 7% between 2019 and 2023.[16]

To give a sense of how deeply entrenched Southeast Asia has become in global supply chains, **the region's exports totalled US$1.8 trillion in 2023, out of which 14.9% went to the US and 8.6% went to the EU**.[17]

The region is also seeing tremendous growth as a consumer market. If viewed as a country, ASEAN would be the world's third most populous nation. Southeast Asia is home to a rapidly expanding consumer market. In 2024, the region was home to about 245 million middle-income consumers and a further 85 million upper middle-income shoppers.[18] This number is projected to rise to 415 million by 2030, surpassing the entire US population.[19] The region's large youth population, with 213 million people aged 15 to 34,[20] provides a robust labour supply and fuels domestic consumption growth. As millions of young people enter the workforce, spending on goods and services is expected to accelerate.

Figure 7: ASEAN exports (US$ billion, 2023)



Source: ASEAN Statistical Highlights 2024[21]

14 Fidelity International (2023): China + 1 = ASEAN: A winning formula.
15 McKinsey (2024): China plus one: Opportunities in Southeast Asia.
16 McKinsey (2024): China plus one: Opportunities in Southeast Asia.
17 ASEAN (2024): ASEAN Statistical Highlights.
18 BCG (2024): The Next Chapter: Decoding The Future Of FMCG In Southeast Asia.
19 BCG (2024): The Next Chapter: Decoding The Future Of FMCG In Southeast Asia.
20 ASEAN (2017): First ASEAN Youth Development Index.
21 ASEAN (2024): ASEAN Statistical Highlights.

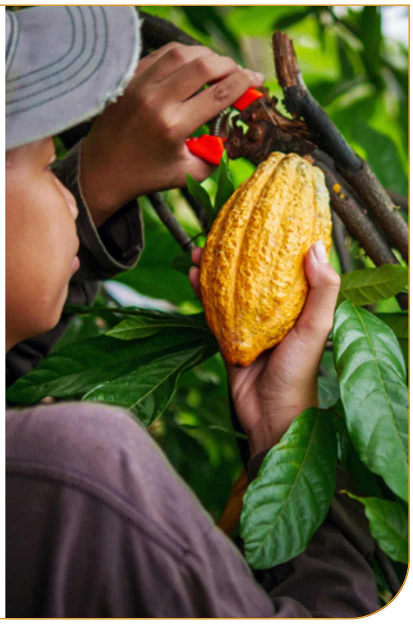
Southeast Asia's Role in Key Sectors

CONSUMER GOODS

The region plays a key role in the consumer goods sector. As an example, textiles are one of the largest export products from ASEAN, amounting to almost US$34.9 billion in 2022.[22] Vietnam was the largest textiles exporter in ASEAN in 2022, with exports totaling US$17.3 billion, followed by Cambodia at US$6.3 billion and Indonesia at US$4.6 billion.[23] When it comes to the cosmetics sector, Singapore and Thailand are respectively the largest and second largest exporter in ASEAN.[24] Similarly, the region is also an important base for global footwear manufacturing, with Vietnam and Indonesia both ranking within the top five footwear exporters globally in 2023.[25]

FOOD AND BEVERAGE (F&B)

In 2022, agricultural activities accounted for 11% of ASEAN's total GDP and a third of all jobs in the region.[26] Smallholder farmers and agri-MSMEs play a crucial role in regional and global food production, with an estimated 100 million farmers managing farms that average just two hectares.[27] In Southeast Asia, Thailand and Vietnam rank respectively as the second and third largest rice exporters globally.[28] Additionally, Indonesia, Malaysia, Thailand, and Vietnam account for almost 80% of global natural rubber production and exports.[29] In 2023, Vietnam exported coffee worth approximately US$3.4 billion, positioning it as the fourth-largest coffee exporter globally.[30] Other major agricultural exports include cocoa, vegetable oils, pepper, and tea.



22 ASEAN Investment (2025): Textile and Apparels.
23 ASEAN Investment (2025): Textile and Apparels.
24 Indexbox (2025): ASEAN Cosmetics - Market Analysis, Forecast, Size, Trends and Insights.
25 World Footwear (2024): The World Footwear Yearbook 2024.
26 Calculations by CIIP based on data from World Bank national accounts data, OECD National Accounts data files, and the ASEAN Statistical Yearbook.
27 World Wildlife Fund (2021): Unlocking Smallholder Finance for Sustainable Agriculture in Southeast Asia.
28 Statista (2025): Principal rice exporting countries worldwide in 2024/2025.
29 ARC Group (2022): Rubber Manufacturing in Southeast Asia, an Introduction Part 2: Vietnam and Malaysia.
30 Statista (2023): Coffee exports in the Asia-Pacific region.

ELECTRICAL AND ELECTRONICS (E&E)

Asia is central to global supply chains for electrical and electronic products. Electronics is the largest export industry accounting for 29% of the total value exports in the region in 2022.[31] In 2023, ASEAN's share of global electronics exports increased to 18%, marking a 5% rise since 2015.[32] Malaysia, the Philippines, Thailand, and more recently, Vietnam are ASEAN's main E&E exporters.

Within this sector, the semiconductor industry plays an important role. In 2022, 48% of the electronic chips imported by the US came from Southeast Asia.[33] The semiconductor industry in Malaysia, the Philippines, Singapore, Thailand, and Vietnam, has seen substantial growth, and the Southeast Asian semiconductor market is expected to grow by 11.25% from 2024 to 2029.[34]

TOURISM

The Asia-Pacific is the second largest market for global tourism as of 2024, with international arrivals growing by 33% from 2023.[35] In Southeast Asia, Thailand was the world's 8th most visited country in 2024. The travel and tourism industry generated approximately 12.1% of ASEAN's combined GDP and provided jobs to 42 million in Southeast Asia.[36] Following the signing of a Memorandum of Understanding between ASEAN and UN Tourism in January 2025, the region has committed to promoting the growth of sustainable, community-centric tourism that benefits local communities.[37]

31 Roland Berger (2023): The Rise of Southeast Asia: Can it become the new manufacturing hub of choice?
32 The Business Times (2024): Asean has benefited from shifting trade patterns since start of US-China trade war: MAS.
33 ISEAS Perspective (2024): The Impacts of Supply Chain Reconfiguration on ASEAN Economies; McKinsey Global Institute (2023): Asia on the cusp of a new era.
34 Source of Asia (2024): Indonesia and Thailand's EV Boom Driving Semiconductor Growth.
35 United Nations World Tourism Organisation (2025): International tourism recovers pre-pandemic levels in 2024.
36 ASEAN for Business Bulletin (2024): Developing Sustainable Tourism in a Post-COVID-19 ASEAN.
37 ASEAN (2025): ASEAN, UN Tourism join forces to transform the region's tourism sector.

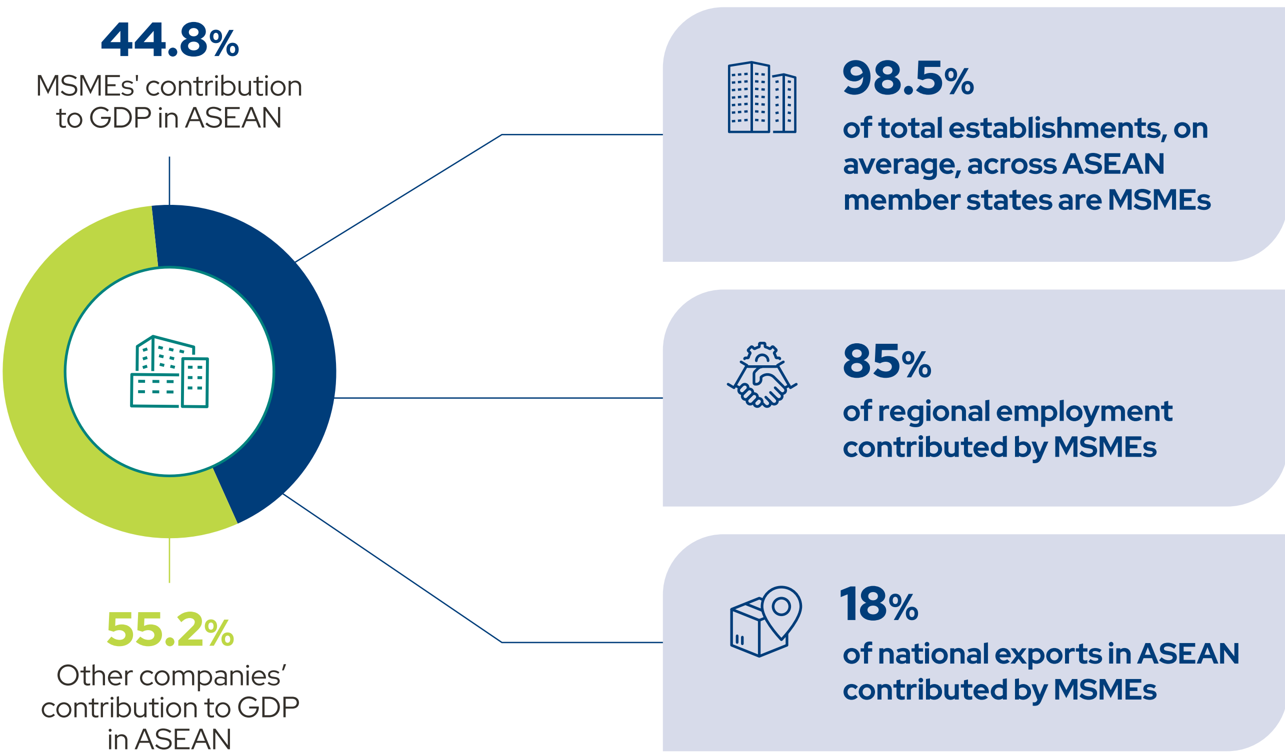
MSMEs as Drivers of Southeast Asia's Economy

MSMEs form the backbone of Southeast Asia's economy. 97% of the region's companies are MSMEs, employing 85% of the region's population and contributing to 44.8% of the region's economic development.[38]

Beyond their economic weight, MSMEs are critical engines of innovation, particularly in sectors such as sustainable manufacturing and climate resilience. Their ability to develop localised solutions, whether through circular economy models that reduce waste, or tech-enabled supply chain efficiencies, demonstrates their role in shaping the region's future. By driving value-added activities and pioneering new business models, MSMEs not only support long-term, sustainable economic development but also help bridge the region's development gap.

MSMEs are also central to employment generation in these economies. For example, across Malaysia (2023) and Vietnam (2022), between 25 to 30% of MSME employment is concentrated in the agriculture and manufacturing sectors.[40]

Figure 8: The role of MSMEs in Southeast Asia's Economy[39]



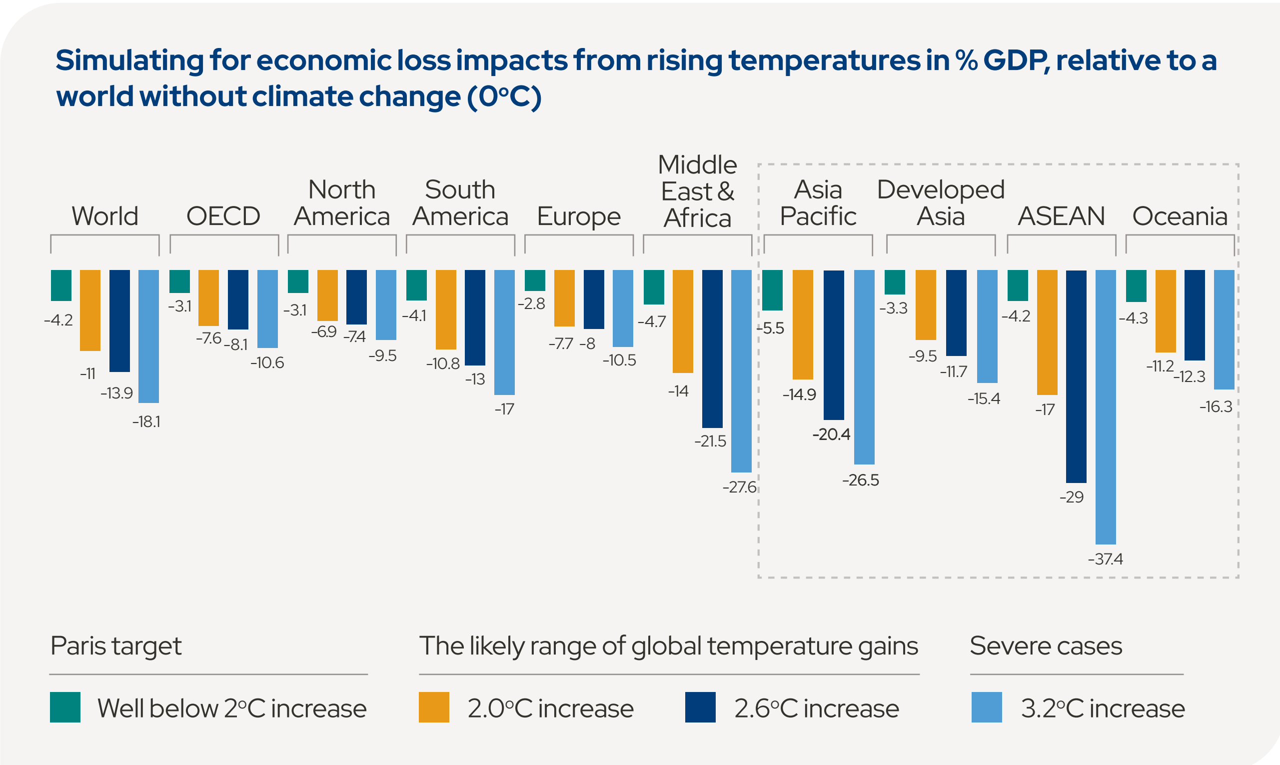
38 ASEAN (2024): Development of Micro, Small, and Medium Enterprises in ASEAN (MSME). The definition of an 'MSME' is country-dependent but regardless, is usually defined on the basis of annual sales, operating revenue, and number of employees. drive economic and social development in both rural and urban areas.
39 ASEAN (2025): Development of Micro, Small, and Medium Enterprises in ASEAN (MSME).
40 ADB (2024): 2024 Asia Small and Medium-Sized Enterprise Monitor | ADB Data Library. Data for MSMEs in Indonesia and Singapore is unavailable.

The Impact of Climate Change on MSMEs

Southeast Asia is at the frontlines of climate change, with ASEAN expected to be the region most severely affected by rising temperatures.

The costs of climate change are already being felt in rising energy prices, increasing water scarcity, worsening pollution, and knock-on effects on food security and public health. According to the Swiss Re Institute, **ASEAN could lose as much as 17% of GDP by 2050 if temperatures rise by 2°C, with significant losses projected for Indonesia (17%), Malaysia (22%), Singapore and Thailand (20% each)**.[42] These losses are driven by reduced agricultural productivity, extreme weather events, and impacts on human health and ecosystems.[43] Emerging Asian economies, including Indonesia, the Philippines, and Thailand are projected to be particularly vulnerable to financial losses from severe weather events.[44]

Figure 9: Estimated impact of rising temperatures on GDP across Asia



Source: World Economic Forum (2023); Swiss Re Institute (2021)[41]

41 Adapted from graph published by World Economic Forum (2023): Accelerating Asia's Advantage: A Guide to Corporate Climate Action, based on data from Swiss Re Institute (2021): The economics of climate change: no action is not an option, April 2021.
42 Swiss Re Institute (2021): The economics of climate change: no action is not an option, April 2021.
43 Asian Development Bank (2015): Climate Change Losses for Southeast Asia Well Above Previous Estimate.
44 Swiss Re Institute (2024): Changing climates: the heat is (still) on.

Governments across ASEAN increasingly recognise these risks and are beginning to put in place regulations and systems aimed at strengthening climate adaptation and resilience. This includes domestic efforts to build infrastructure, enhance disaster preparedness, and incentivise sustainable business practices. **These measures complement the growing regulatory pressure from markets such as the EU and the US, where stringent sustainability requirements are being introduced.** The combined effect underscores the urgency for MSMEs to adopt ESG practices to remain competitive and resilient in the face of escalating climate risks.

Crucially, **MSMEs bear a disproportionate brunt of these climate-induced challenges**, lacking buffers against shocks like water or power disruptions. As climate change drives up temperatures, demand for cooling and water rises. For example, electricity tariffs in Singapore increased by 5.7% between 2H 2023 and 1H 2024.[45] Furthermore, 16% of electricity used in buildings now is for cooling; this is expected to grow to around 30% by 2035.[46] The International Energy Agency projects that Southeast Asia's electricity demand will rise by 4% annually to 2035, outpacing the 3% growth in overall energy demand, making further cost increases likely.[47] This underscores how fluctuations in utility prices can have an outsized effect on business viability, particularly for smaller firms operating on tighter margins.

Despite these challenges, **embracing sustainability offers MSMEs an opportunity to benefit from growing demand for green supply chain solutions**, such as sustainable packaging, waste management technologies, and renewable energy adoption. Forward-looking MSMEs can reposition themselves to enhance their long-term competitiveness.

Image © Hilton

45 Energy Market Authority (2025): Singapore Energy Statistics 2024.
46 The International Energy Agency (2024): Executive Summary - Southeast Asia Energy Outlook 2024.
47 The International Energy Agency (2024): Executive Summary - Southeast Asia Energy Outlook 2024.

The Impact of MNC Action on MSMEs

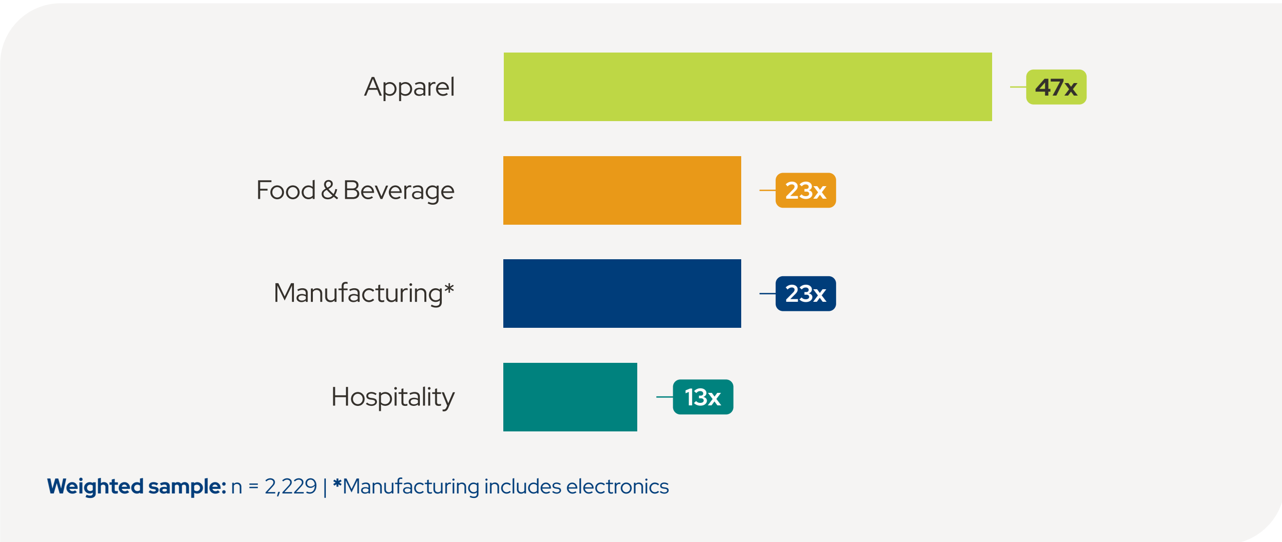
From an MNC's perspective, for any sustainability-related action to make a difference, it will have to reach deep into the supply chain. The discussions around greenhouse gas emissions makes this patently clear. Depending on the industry, Scope 3 emissions as a proportion of Scope 1 and Scope 2 emissions can vary. This can go to as much as 47x, in the case of the apparel industry (see Figure 10).

Emissions are a tangible and quantifiable ESG indicator across supply chains, and many large companies are already accounting for their Scope 3 emissions. Upstream emissions - those generated before the transportation and distribution of final sold products - account for an average of two-thirds of Scope 3 emissions, making them a key priority for reduction.[48]

Since Scope 3 includes emissions from suppliers, this often corresponds to Scope 1 emissions of MSMEs in deeper supply chain tiers. Taking the example of apparel producers, where purchased goods emissions are driven by textiles. Processes such as dyeing and finishing can be energy intensive, and petrochemical-based products like nylon and polyester are created from fossil fuels. Decarbonisation can thus involve the substitution of emissions-intensive textiles with alternatives such as organic cotton or recycled polyethylene terephthalate (rPET), reducing emissions by up to 50 percent.[49]

This journey toward decarbonisation is a progressive one, requiring sustained effort and strategic action. **It can take firms 12–18 months for partial Scope 3 disclosure and 1–3 years to deliver full Scope 3 disclosures, with up to 3–5 years to see meaningful reductions in Scope 3 upstream emissions** (with variations by sector, region, and supply chain footprint).[50]

Figure 10: Average supply chain emissions by industry (ratio of Scope 3 : Scopes 1+2 emissions), 2023



Source: CDP 2023 disclosure data, filtered for corporates with sufficient verification of emissions disclosed evidences in responses

48 McKinsey (2024): Tackling Scope 3 emissions through supplier collaboration.
49 McKinsey (2024): Tackling Scope 3 emissions through supplier collaboration.
50 CDP & Boston Consulting Group (2024): Scope-3 Upstream: Big Challenges, Simple Remedies.

Image © Ghim Li Group

Implementing supply chain initiatives from the MNC level can be difficult, given the limited view many have of their supply chains. Nonetheless, Standard Chartered's 2021 survey of 400 MNCs found that almost a third were already removing suppliers that endanger their transition.[51] The full efforts of such action will take time to be felt, due to the difficulties in tracing the suppliers through different tiers. **According to a 2022 McKinsey survey, only 17% of MNCs have visibility deep into their supply chain tiers, down to Tier-3 and beyond.** Despite this, MNCs have already begun taking a **zero-tolerance approach toward Tier-1 suppliers who are slow to meet net-zero targets**. It is a matter of time before the cascading effects will be felt on suppliers in Tier-2 and beyond.[52] The effects can be positive - many MNCs have begun to develop shared goals with Tier-1 suppliers, offering preferred supplier status, additional benefits, and better prices to these suppliers who meet their goals. The question is whether or not these positive effects can be passed on to Tier-2 suppliers and beyond. However, effects can also be negative - MNCs are also relocating their operations to markets where suppliers including MSMEs are better able to meet strict supplier codes of conduct.

In the course of our study, we found that some MSMEs may choose to delay adoption of sustainable practices, hoping regulatory commitment may waver due to political uncertainties. The reality is that many MNCs have already set in motion their sustainability journeys. As the later chapters of this report illustrate, many MNCs have also embraced the need to be responsible not just to their shareholders and stakeholders, but also future generations for which a healthy environment is equally important. These MNCs have seen that adopting sustainable practices also positions them for long term success. Such requirements are **likely to hold even amidst changes in the global trade environment**.

There is therefore **significant upside for MSMEs who gear themselves up to meet stricter MNC supplier codes of conduct**. In addition, there is an increasing number of technology solutions for supply chain data collection and management. These could be developed in-house by MNCs or solution providers such as carbon and ESG data management startups. MSMEs would do well to avail themselves of these solutions, in order to gain an advantage vis-à-vis their competitors.

51 Standard Chartered (2021): Carbon Dated.
52 McKinsey (2022): Taking the pulse of shifting supply chains.

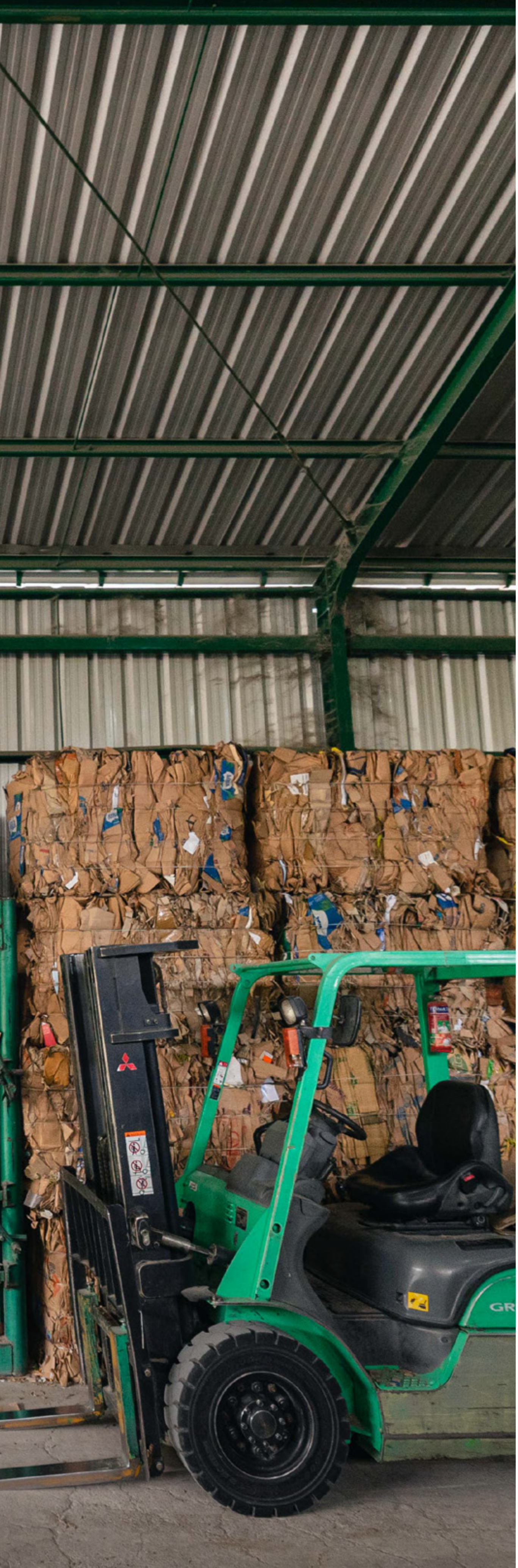


Image © Daya Selaras Group

Why MSMEs Cannot Ignore Sustainability Requirements

The foundations for sustainability-related regulatory requirements which have emerged in recent years go far back. Firms have had a long period to socialise the idea that they must also embrace sustainability considerations.

1972: Concept of sustainable development introduced at the first UN Conference on the Human Environment in Stockholm

1991: Setting up of the Business Council for Sustainable Development

1992: Establishment of the UN Framework Convention on Climate Change

1995: First Conference of the Parties (COP) in Berlin

1996: ISO environmental management standards introduced

1999: Launch of the Dow Jones Sustainability Group Indexes

2004: UN Global Compact coins the term ESG

2010: ISO social responsibility standards introduced

2016: Global Reporting Initiative (GRI) standards introduced

2023: International Sustainable Standards Board (ISSB) standards introduced

---

It is against this backdrop that more recent directives have emerged. **This means that while there may be short term fluctuations in terms of the reach of different regulations, the long-term trajectory is clear.** The combination of the real effects of climate change, together with the business case for MNCs to implement sustainability requirements deeper into the supply chains, will introduce some stickiness to the path ahead.

REGULATIONS NOT ORIGINATING FROM SOUTHEAST ASIA

The most comprehensive of the sustainability-related directives introduced in recent years is probably the EU's Corporate Sustainability Due Diligence Directive (CSDDD), which was ratified by the European Commission in 2022 and adopted by the EU Parliament in July 2024. It requires both EU and non-EU companies operating in the EU to take responsibility for the environmental and social impacts of their value chains, including those of suppliers and their sub-suppliers and business partners, imposing fines of as much as 5% of global turnover if abuses are identified.[53]

The expansion of international regulations and disclosure requirements for ESG and sustainability mandates also includes the EU Corporate Sustainability Reporting Directive (2023), EU Directive on Corporate Sustainability Due Diligence (2024), and the Carbon Border Adjustment Mechanism (to be fully implemented by 2026). While primarily targeting large corporations headquartered in Europe and the environmental and social damages of their operations, these new stringent regulations will have trickle down implications. Tier-1 suppliers will be affected most immediately, but this will have knock-on effects on deeper-tier suppliers which are mainly MSMEs, including those in Southeast Asia.

The extent to which these regulations will affect MSMEs differs. The regulatory landscape is also shifting rapidly, with new requirements being introduced and existing frameworks being adapted to global trends. The information in table below reflects the current state as at time of writing in March 2025, but changes may occur as governments and industries refine their sustainability approaches and reporting standards. It is important to note that the Omnibus legislative package announced by the EU Commission in February 2025 comprises proposals that are still subject to negotiation. The final amendments to the Directive, as well as how they are implemented at the member state level, remain uncertain.

Image © Mirova, JALA

53 Baker McKenzie (2024): European Union: Penalties and civil liability under the CSDDD.

Figure 11: Notable sustainability regulations with potential impacts on MSME value chain partners (non-exhaustive)

Announcement of regulations and impact on MSMES

ANNOUNCED IN 2022

EU CORPORATE SUSTAINABILITY REPORTING DIRECTIVE (CSRD)[54]

Impact on MSMEs: While CSRD targets large EU companies and listed SMEs, Asian SMEs in their supply chains may face indirect pressure to report on ESG and emissions data (Scopes 1 & 2) to support their buyers' Scope 3 disclosures. Non-compliance could risk business with EU firms. Future provisions may also affect non-EU companies operating in the EU, though details remain unclear.

ANNOUNCED IN 2022

ECODESIGN FOR SUSTAINABLE PRODUCTS REGULATION (ESPR)[55]

Impact on MSMEs: ESPR applies to products sold in the EU, so Asian SMEs exporting or supplying items like textiles, electronics, or packaging may need to meet stricter ecodesign and sustainability standards. They will face growing pressure to provide data on product durability, reparability, recyclability, and environmental footprint—especially with the rollout of the Digital Product Passport (DPP). Non-compliance could limit EU market access.

ANNOUNCED IN 2022

CORPORATE SUSTAINABILITY DUE DILIGENCE DIRECTIVE (CSDDD)

Impact on MSMEs: CSDDD targets large EU and non-EU companies but will indirectly affect Asian SMEs in their value chains. These MSMEs may face increased scrutiny and pressure to align with human rights and environmental standards. Larger companies are expected to support SME partners in meeting these requirements. Lack of data or noncompliance by Asian MSMEs could reduce business opportunities with EU buyers.

ANNOUNCED IN 2023

EU REGULATION ON DEFORESTATION-FREE PRODUCT (EUDR)[56]

Impact on MSMEs: The EUDR applies to all companies, including MSMEs, that sell covered products in the EU market, either directly or indirectly. Any SME involved in the production, trade, or supply chain of regulated commodities (including cattle, cocoa, coffee, palm oil, soy, rubber, and wood) or their derived products must comply with strict due diligence, geolocation traceability, and deforestation-free certification requirements. Even if an SME does not export directly to the EU, it may still need to provide compliance data if it supplies to larger exporters selling to the EU. Non-compliance can lead to market access restrictions, penalties, and loss of EU buyers.

ANNOUNCED IN 2023

EU CARBON BORDER ADJUSTMENT MECHANISM (CBAM)[57]

Impact on MSMEs: CBAM applies to supply chains of goods like steel, aluminium, and fertilisers sold into the EU. While EU importers hold direct obligations, Asian SMEs will face indirect pressure to measure and report carbon emissions. Buyers may pass down compliance to avoid penalties or higher costs. SMEs unable to provide emissions data or show low-carbon practices risk losing EU business. The EU Omnibus Proposal introduces a new threshold of 50 tons of mass per year, which would exempt 90 percent of importers while still keeping 99 percent of emissions within the CBAM scope.

54 CIIP and PwC Singapore (2024): Enabling SME resilience in FMCG supply chains.
55 European Commission (2025): Ecodesign for Sustainable Products Regulation.
56 CIIP and PwC Singapore (2024): Enabling SME resilience in FMCG supply chains.
57 EU (2025): Carbon Border Adjustment Mechanism.
58 Timing is indicative and yet to be detailed in proposed changes; June has been used to represent the middle of the year.

Compliance deadlines for MSMEs

The timeline presented below reflects the current state of regulations as of March 2025. However, it is important to note that the EU Omnibus[58] proposals may affect the implementation timelines and scope of certain regulations. If adopted, these proposals could introduce delays of up to two years for some requirements and reduce the number of companies in scope through revised thresholds.

2023

June: **EUDR** entered into force

October: Under **CBAM**, Asian SMEs exporting to the EU must start submitting quarterly emissions reports for covered goods

2024

Under **CSRD**, according to the Omnibus Proposal, Wave 1: Large Public Interest Entities (PIEs) to start reporting in June FY2024

July: **CSDDD** entered into force

July: **ESPR** entered into force, with general measures applicable

December: **EUDR** initially scheduled to be applicable, however, the EU Parliament and the Council have recently agreed to delay its application by one year to give companies and authorities more time to better prepare for its implementation

2025

December: **EUDR** will be binding for large operators and traders

2026

January: **CBAM** certificates must be purchased by Asian MSMEs exporting covered goods to the EU, to cover the carbon footprint of their products

June: **EUDR** to be implemented by micro- and small companies

July: Under **ESPR**, large enterprises must comply with the ban on destroying unsold products; DPP registry is expected to be operational

2027

Under **CSRD**, according to the Omnibus Proposal, Wave 2: Large EU companies to start reporting in June FY2027 (2 year later delay than initially planned)

CSDDD transposition deadline postponed by a year to July 2027, based on the Omnibus Proposal

2028

Under **CSRD**, according to the Omnibus Proposal, Wave 3: Listed SMEs to start reporting in June FY2028 (2 year delay)

Under **CSDDD**, according to the Omnibus Proposal, obligations for Wave 1 companies (EU companies: >5,000 employees, >€1.5 B turnover + Non-EU companies: >€1.5 B turnover (in EU)) have been postponed by a year to July 2028

July: Under **CSDDD**, according to the Omnibus Proposal, obligations for Wave 2 companies take effect (EU companies: >3,000 employees, >€900M turnover + Non-EU companies: >€900M turnover (in EU))

2029

July: Under **CSDDD**, according to the Omnibus Proposal, obligations for Wave 3 companies take effect (EU companies: >1,000 employees, >€450M turnover + Non-EU companies: >€450M turnover (in EU))

2030

July: Under **ESPR**, medium-sized enterprises must comply with the ban on destroying unsold products. Small and micro enterprises are currently exempt from the ban

REGULATIONS ORIGINATING FROM SOUTHEAST ASIA

Southeast Asian governments are also putting in place their own regulations, either on their own or as part of ASEAN. For example, the ASEAN Taxonomy Board has revised the ASEAN Taxonomy for Sustainable Finance to include a Foundation Framework, which describes methodologies for the assessment of economic activities, and a Plus Standard, which gives companies the opportunity to demonstrate their ESG commitment.[59]

In line with the prominence of environmental concerns, as at time of writing in March 2025, ASEAN countries have affirmed their shared commitment to sustainable development and climate action through a Joint Statement on COP 28 (the 2023 United Nations Climate Change Conference), continuing to participate in global climate initiatives ranging from the Global Cooling Pledge to the Coal Transition Accelerator and the Powering Past Coal Alliance.[60] Other initiatives include the Declaration on Portability of Social Security Benefits for Migrant Workers in ASEAN (2022), Framework for Circular Economy for the ASEAN Economic Community (2021), ASEAN Plan of Action for Energy Cooperation (2020), ASEAN Declaration on the Gender-Responsive Implementation of the ASEAN Community Vision 2025 and Sustainability Development Goals (2017), and Work Plan for Forest Law Enforcement and Governance (FLEG) (2016).[61]

Regional governments are also putting in place national guides around provision of green financing and green certification of MSMEs. These include the Indonesia Taxonomy for Sustainable Finance launched by Indonesia's Financial Services Authority (launched in February 2024),[62] the Singapore-Asia Taxonomy for Sustainable Finance (launched in December 2023),[63] which specifies criteria defining activities recognised as addressing climate change, the Simplified ESG Disclosure Guide launched by Capital Markets Malaysia (launched October 2023),[64] and the Vietnam Green Taxonomy (still in development under Vietnam's Ministry of Natural Resources and Environment).[65]

Governments may opt for a variety of approaches and policy tools, depending on their country's needs and context. For instance, ASEAN countries vary in their national strategies and climate commitment targets.

- Indonesia's Ministry of National Development Planning (Bappenas) published their Circular Economy roadmap in 2024, which details their aims to reduce textile waste and to increase usage of recycled materials in textile production.
- Malaysia aims for a 70% share of renewable energy installed capacity in the power mix by 2050 and prioritises environmental conservation.
- Singapore is aiming for net-zero emissions by 2050, with plans for solar power, a significant increase in carbon tax, and the promotion of cleaner energy vehicles.
- Vietnam plans to revise its renewable energy legal frameworks and promote innovative agricultural practices that would lower emissions.[66] It has thus implemented policies such as the Environmental Protection Law (2020) and Vietnam Green Growth Strategy.[67]

59 ASEAN Capital Markets Forum (2023): News Release: ASEAN Taxonomy Version 2 receives broad affirmation following stakeholder consultation.
60 ACCEPT II (2024): ASEAN at COP 28: Affirming the Net-Zero Commitment.
61 RSM (2024): ESG Practices in ASEAN & Korea: Pathways Towards Sustainability.
62 OJK (2024): Indonesian Taxonomy for Sustainable Finance.
63 Monetary Authority of Singapore (2023): MAS Launches World's First Multi-Sector Transition Taxonomy.
64 Capital Markets Malaysia (2023): Simplified ESG Disclosure Guide (SEDG).
65 OJK (2025): Sustainable Finance; Vietnam Investment Review (2023): Expectations great for green taxonomy in Vietnam.
66 ACCEPT II (2024): ASEAN at COP 28: Affirming the Net-Zero Commitment.
67 Viet Nam Government Portal (2021): National green growth strategy for 2021-2030, vision towards 2050.

Support for MSMEs

As indicated earlier, according to Standard Chartered's Carbon Dated report from 2021, **nearly a third of MNCs surveyed have already begun to pursue a zero-tolerance approach to their supply chains**, removing suppliers endangering their net-zero transition commitments.[68]

Support for MSMEs to adapt to international and regional regulations has come from many places. At the ASEAN level, this has been bolstered through initiatives from the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME). The committee has established resources like the ASEAN Access web portal and the ASEAN SME Academy to provide information and tools about regional and international markets. Events with a focus on ESG and MSMEs include a July 2023 policy dialogue to promote MSME transition to and participation in the circular economy,[69] including the sustainable use of natural resources, improved product design, extended use/reuse, and recycling.[70] ACCMSME also publishes toolkits, including guides for policymakers on supporting women's entrpreneurship and faciliting the green transition for SMEs.[71]

Complementing this regional-level support are resources specific to each country, such as those provided by the Indonesian Chamber of Commerce and Industry (Kadin), Enterprise Singapore, and the Vietnam Chamber of Commerce and Industry (VCCI).[72]

The region continues to see sustainability as a key driver of economic growth, evidenced by the theme of Malaysia's 2025 ASEAN Chairmanship, 'Inclusivity and Sustainability'. Sustainability remains crucial to enabling business resilience and the ability to expand customer reach, even amidst dramatic disruptions to global trade norms.

How have MSMEs responded? In the next chapter, we share the findings of the surveys we conducted.

Image © Koltiva

68 Standard Chartered (2021): Carbon Dated.
69 ASEAN (2023): ASEAN advances MSME engagement in circular economy.
70 UNDP (2023): What is circular economy and why does it matter?
71 ASEAN (2024): Development of Micro, Small, and Medium Enterprises in ASEAN (MSME): Key Initiatives.
72 Enterprise Singapore (2023): Sustainability Playbook for Enterprises - Embarking on Your Environmental, Social, and Governance (ESG) Journey; Vietnam Chamber of Commerce and Industry (2024): Turning ESG Challenges into Opportunities; Ministry of Investment, Trade, and Industry, Malaysia (2025): iESG; Kadin ESG Initiatives (2025): ESG Task Force.

02 Implementation of Sustainable Practices by MSMEs in Southeast Asia

The term "ESG" evokes different reactions, depending, among other factors, on where the company is located and what type of company it is. For the purposes of this study, we did not dive into the evolution of ESG from the time it was first used in a 2004 report on a joint initiative by the United Nations (U.N.) Global Compact and eighteen key financial institutions from nine countries.[73] Rather, at the outset of any outreach with the MSME, be it in the form of a survey or a roundtable discussion, we shared a definition of sustainability and ESG before diving into the questions.

Defining ESG

For purposes of this report, we define ESG as comprising three key components:

Environmental: The impact of a company on the environment with respect to the resources required, energy consumed, waste produced (including greenhouse gases and waste management as well as pollution emissions), and the subsequent impact on the ecosystem.

Social: The relationships between a company and its employees, suppliers, customers, and communities.

Governance: A company's internal controls, policies, and practices which are applied to corporate decision-making and actions as well as compliance with laws and regulations.

73 The Global Compact (2004): Who Cares Wins.

ESG Awareness Varies More Across Countries, than Sectors

Given that the MSMEs selected for our survey had to be involved in B2B activities (with the exception of tourism) and have some involvement in the international or export-related activities, we had expected reasonable levels of ESG awareness.

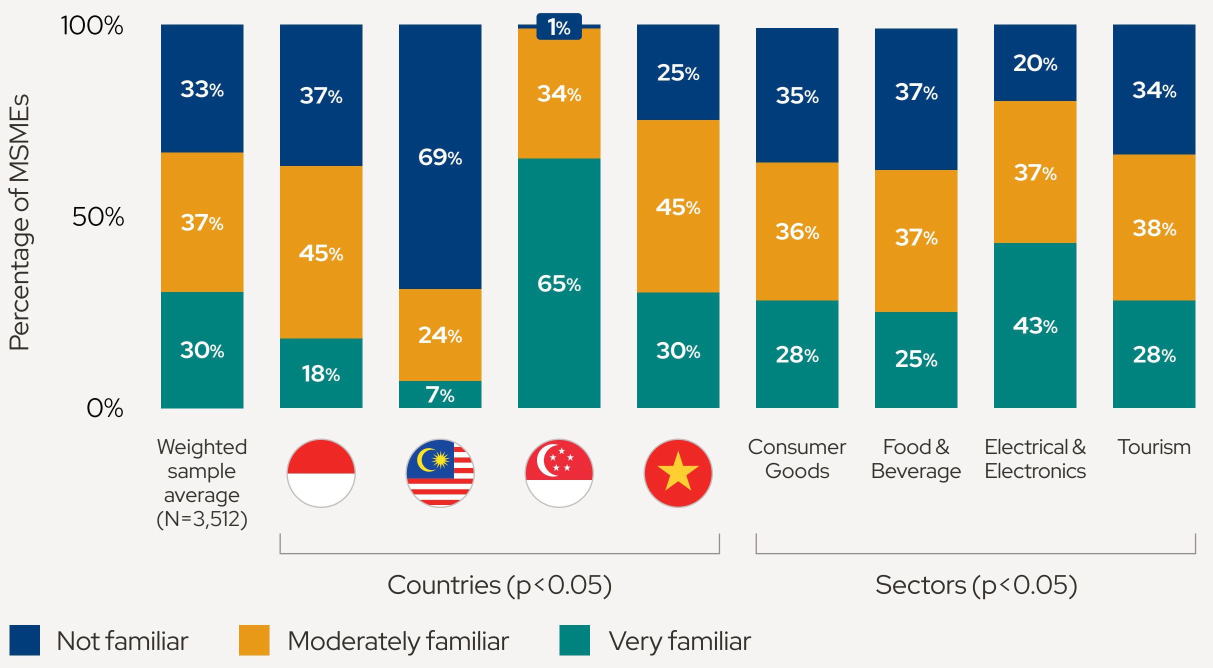
The survey results bore this out – the MSMEs surveyed are generally aware of the concept of ESG. On average, across the four countries studied, **two thirds (67%) of the survey respondents indicate that they are familiar with the concept of sustainability/ESG for business, and 30% of them consider themselves to be 'very familiar' with it** (Figure 12).

However, their levels of understanding vary widely across countries.

DIFFERENCES IN ESG AWARENESS ACROSS COUNTRIES

Overall, **MSME management teams in Singapore are the most familiar with ESG** – almost all Singapore MSMEs indicate that their management has moderate to high familiarity with ESG in the business context, and the majority (65%) of them consider themselves 'very familiar' with the concept. In the other markets, the percentage of MSMEs that consider themselves 'very familiar' with ESG is at 30% or below.

Figure 12: ESG awareness varies across different countries and industry sectors



Survey question: How familiar is the management of your company with the concept of sustainability/ESG for business?
Note: Figures have been rounded to the nearest whole number.

"Europe has recently imposed an environmental tax, and electronics is one of the first six industries to be taxed. Therefore, electronics businesses must be aware of ESG if they want to meet the standards for exporting to Europe."

E&E MSME in Vietnam

"I only know ESG when I want to sell to European clients."

E&E MSME in Malaysia

We also noted some recency effects. For example, in Singapore, significant visibility was given to ESG in early 2024, driven by intensifying focus on the Singapore Exchange's (SGX) sustainability reporting requirements. Under these regulations, large non-listed companies will be required to disclose climate-related data from FY 2027, with Scope 3 emissions reporting mandated from FY 2029. This may have led to relatively high levels of awareness captured at the time of the survey in mid-2024. This is likely to be sustained as ESG discussions continue to feature in the media, through activities such as the launch of Enterprise Singapore's SME Sustainability Reporting Programme in late 2024.

In Malaysia, regulatory momentum will also likely influence SME awareness. Capital Markets Malaysia (CMM), an affiliate of the Securities Commission Malaysia (SC), launched the Simplified ESG Disclosure Guide (SEDG) for SMEs in supply chains in 2023, followed by SME Corp's ESG Quick Guide in Q1 2024. These initiatives indicate a growing focus on ESG compliance, and we can reasonably expect awareness levels to continue rising as regulatory frameworks push momentum.

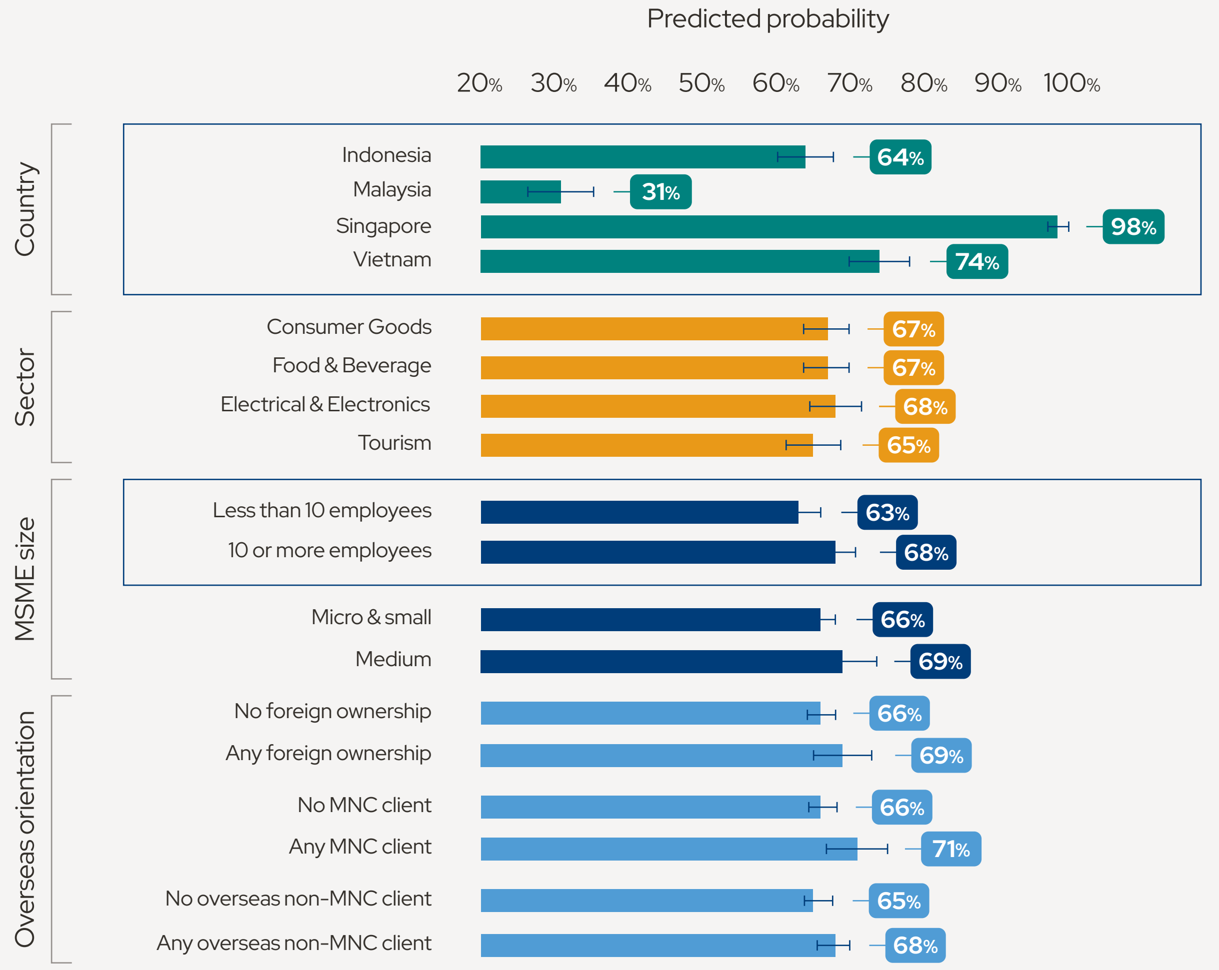
Image © ViTrox

PREDICTORS OF ESG AWARENESS

We considered a multitude of factors that could influence an MSME's level of ESG awareness. This ranged from country of operation, sector, size and overseas orientation of the MSME. A multivariate regression model was used to estimate the probability of ESG awareness, based on these factors.

What emerged was that the **strongest predictors of ESG awareness are country and MSME size**, with the **most prominent influence being the country the MSME is operating in**. MSMEs with ten or more employees are more likely to report moderate or high familiarity with ESG compared to firms with less than ten employees. However, while having foreign ownership/investment, MNC clientele, and other overseas clients are associated with somewhat greater ESG awareness, these do not serve as strong predictors after accounting for country and firm size. Sectoral effects are also minimal in significance.

Figure 13: Predicted probability of moderate/high ESG awareness levels among respondents



Weighted sample: n = 3,512 | **Survey questions:** What sector does your company mainly operate in? Number of full-time employees? Which of the following categories would your company fall into? How would you describe your company's capital structure? Which of the following types of customers does your company serve? Please select all that apply. | **Note:** Estimates reflect the isolated impact of each characteristic on the likelihood of the outcome controlling for the other variables in a multivariate logistic regression model. Error bars shown represent 95% confidence intervals. Statistically significant predictors are indicated in outlined boxes. Figures have been rounded to the nearest whole number.

To appreciate this more deeply, it is useful to understand how MSMEs typically receive guidance and information on sustainability and ESG issues.

The survey findings show a **high reliance on government bodies followed by industry associations**, though in Vietnam the sources of guidance are more diverse. Given the entwinement of regulation and sustainability and ESG issues, it is unsurprising that government bodies are seen as the primary sources of guidance and information on sustainability and ESG issues. This speaks to the importance of alignment of actions across public and private sectors, which we address in our recommendations.

Figure 14: MSMEs' sources of information on sustainability/ESG

Governments play an outsized role in providing clear, credible, and actionable information on sustainability and ESG issues

Percentage of MSMEs reporting any source of guidance or information on sustainability/ ESG (N=2,479)	Weighted sample average				
Government bodies*	45%	54%	47%	41%	42%
Industry bodies & trade associations*	34%	21%	23%	32%	52%
Broadcast media (e.g., online news outlets, newspapers)*	28%	21%	17%	17%	52%
Social media (e.g., LinkedIn, content creators)*	26%	27%	39%	16%	35%
Other MSMEs or professional networks*	25%	24%	34%	16%	35%
Consulting firms*	23%	16%	7%	28%	26%
Corporate clients*	22%	25%	23%	12%	34%
Banks/ financial institutions*	19%	17%	11%	23%	18%
Non-government organisations*	18%	13%	14%	16%	24%
Friend or family contacts*	16%	14%	25%	9%	24%

Survey question: Where would your company typically get guidance or information on sustainability/ESG? Please select all that apply.
Note: The top three sources for each country are highlighted. Figures have been rounded to the nearest whole number.

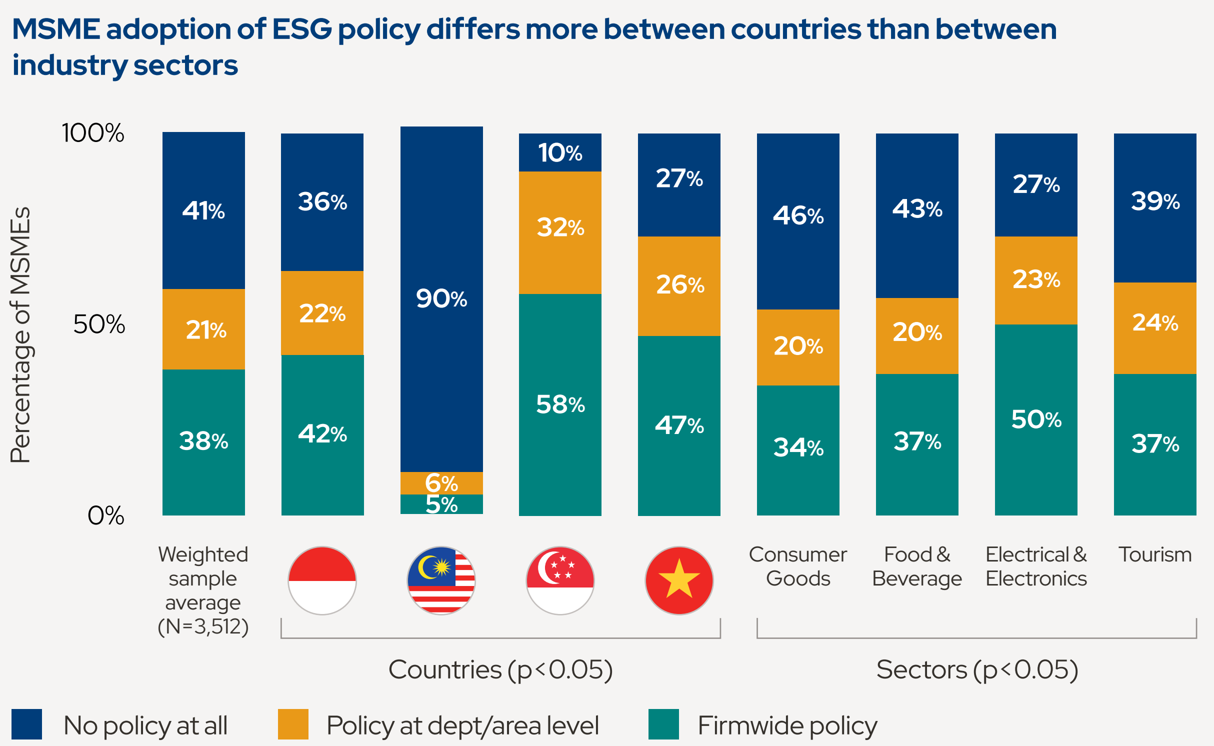
ESG Awareness does not Translate into ESG Policy

VARIATION IN MSME ADOPTION OF ESG POLICY

While there are generally high levels of ESG awareness among the MSMEs surveyed, to achieve tangible and sustained change it is important to put in place relevant policies to guide actions. Our survey found that **three in five (59%) MSMEs have adopted some formal ESG policy or guidelines – whether firmwide or specific to certain departments/ areas (Figure 15).**[74] **Just two in five (38%) of the MSMEs surveyed have adopted firmwide policies or guidelines to address ESG/sustainability**.

ESG policy adoption is highest among MSMEs in Singapore, where almost 60% have a firmwide policy and a further 32% have department- or area-level policies or guidelines. As with ESG awareness, country differences outweigh sectoral differences. Sectoral analysis shows that the electrical and electronics sector has the highest rate of ESG policy adoption, with 50% having a firmwide policy and 23% having department- or area-level policies, whereas ESG policy adoption is lower in other sectors (34%–37% and 20%–24% respectively). However, these differences are less when compared to country differences.

Figure 15: Percentage of MSMEs reporting firmwide policy or guidelines for addressing sustainability/ESG



Survey question: Does your company have a firmwide policy or guidelines for addressing sustainability/ESG?
Note: A statistically significant variation in ESG policy adoption across countries/industry sectors is indicated by $p < 0.05$. Figures have been rounded to the nearest whole number.

74 Calculations based on a weighted sample average.

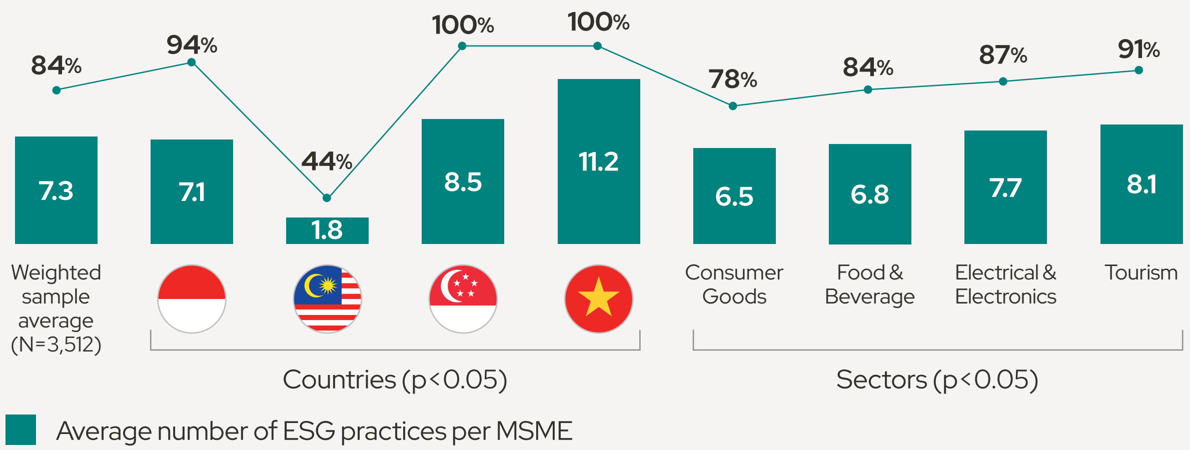
ESG Awareness does not Translate into ESG Practices Either

Ultimately, regardless of levels of ESG awareness and the adoption of ESG policies, it is the implementation of ESG practices which matters most. To understand the types of ESG practices that have been implemented by MSMEs, it was necessary to consider that some MSMEs might have implemented ESG practices without recognising their connection to the concept of ESG. Therefore, the survey respondents were given a list of common environmental, social, and governance practices (seven practices per ESG component, for a total of 21 ESG practices) (highlighted in Figure 6 in earlier chapter) and asked to indicate the practice(s) that they had already implemented, independent of the respondent's awareness of ESG and of the adoption of ESG policies or standards.

The findings show that the **ESG journey is indeed already underway for many MSMEs, even for those who may not have any formal policies or who may not even be aware that what they are doing can be considered part of ESG** – ESG awareness and policy adoption are correlated with but not synonymous with practice implementation. Although only about 70% are aware of ESG and only about 60% have some form of policy in place, a regional weighted average of **84% of the survey respondents have already implemented at least one ESG practice** (Figure 16). Furthermore, each MSME reports having adopted approximately 7 (i.e., one-third) of the 21 listed practices, and only 16% have adopted none.

Although MSMEs in Singapore are most likely to report having adopted policies (Figure 15), it is the MSMEs in Vietnam that implement the highest average number of practices per MSME (11.2). **The differences between countries and between industry sectors are both statistically significant, although the variation between industry sectors is less pronounced than that between countries.** MSMEs in the tourism sector report the highest average number of practices (8.1), followed by those in the electrical and electronics sector (7.7) (Figure 16).

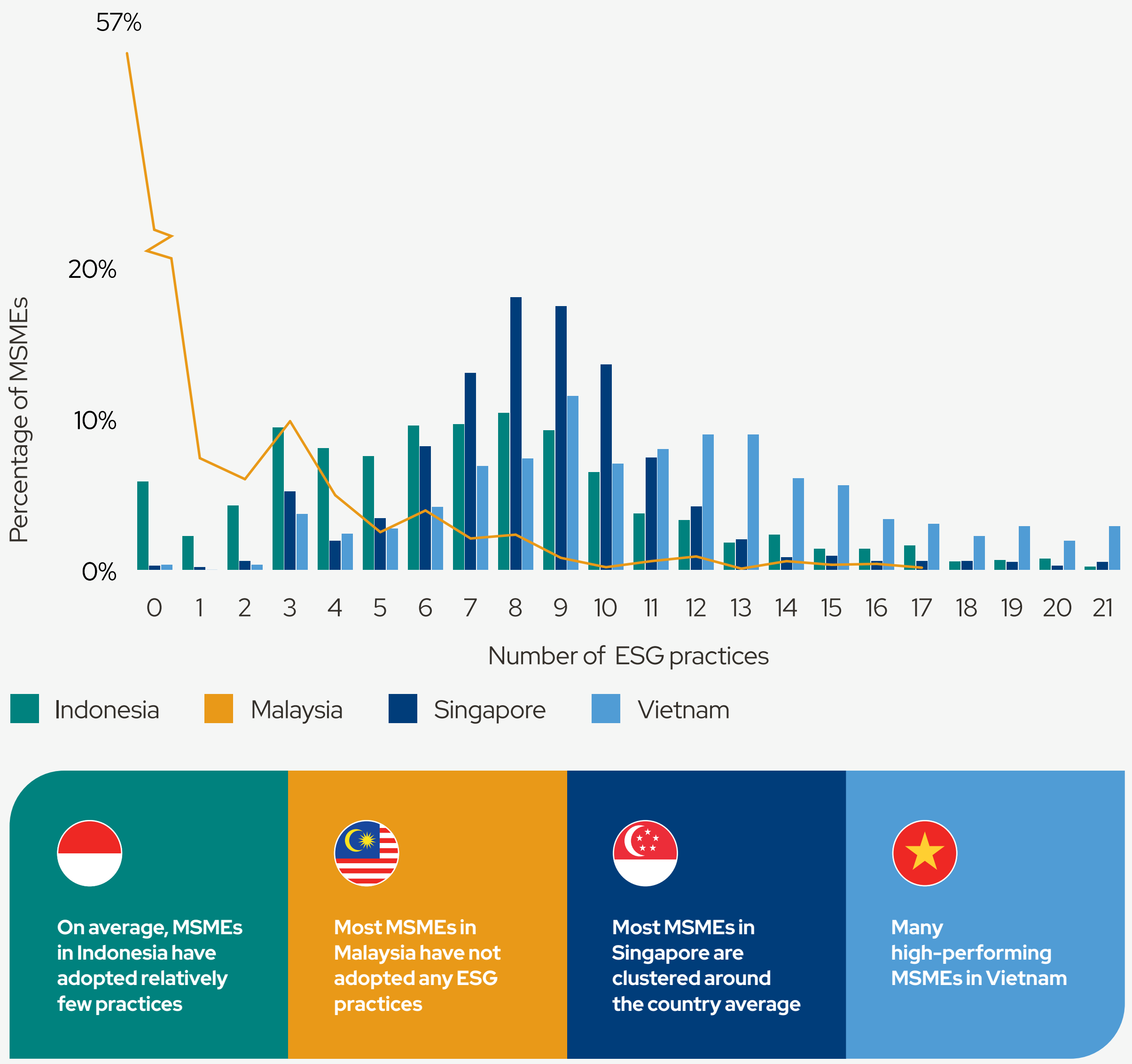
Figure 16: ESG practice adoption rate across countries and sectors – average number of practices and percentage of MSMEs implementing at least one



Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value of less than 0.05 indicates statistical significance, in which the null hypothesis is rejected. Figures have been rounded to the nearest whole number.

Differences between country-level experiences are further revealed by frequency distributions (Figure 17). Most MSMEs in Malaysia are beginning their journey of practice, with many not having yet adopted any ESG practices. In Indonesia and Vietnam, the distribution of practices is relatively uniform with MSMEs across a continuum of practice, suggesting implementation varies across various market conditions. Notably, there are many very high performing firms in Vietnam that have implemented all 21 ESG practices. By contrast, MSMEs in Singapore are largely clustered around the country average, suggesting a stronger country-level effect with few very low performers but also few very high performers.

Figure 17: Frequency distributions suggest different country-level contexts



Weighted sample: n = 3,512 | **Survey question:** Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.

Is the Current Level of Implementation of ESG Practices Sufficient?

Where do these MSMEs stand? Are they doing enough so that, by the time MNCs are mandated to account for the actions of their deep-tier MSME suppliers, they can withstand scrutiny? More fundamentally, are they prepared to meet the requirements set by their local authorities?

Our analyses revealed that the **ESG practices implemented by MSMEs are most likely to be 'basic'**, with each MSME reporting an average of four (of ten possible) 'basic' practices, two (of seven possible) 'good' practices, and one (of four possible) 'progressive' practice (refer to list of practices on page 26). As expected, the number of 'good' and 'progressive' practices implemented is strongly correlated with the number of ESG practices implemented, i.e., the MSMEs that go beyond basic practices are also doing more overall.

Notably, our survey did not ask MSMEs whether they were complying with the law but rather which specific ESG practices they had implemented. This distinction is important as some businesses may have already been following certain regulatory requirements without explicitly identifying them as ESG-related practices. **Requirements such as fair labour practices and environmental safeguards are often mandated under company acts, labour laws, or general business regulations**, which means that **adherence to ESG-related practices is not necessarily a new or additional burden for MSMEs**. For example, the requirement to reduce and dispose of waste properly already exists in all four countries we studied, be it under their environmental protection or waste management laws. In fact, other than Vietnam, the other countries studied have already implemented waste management laws for at least 15 years.[75]


Image © Mirova, Plastics for Change

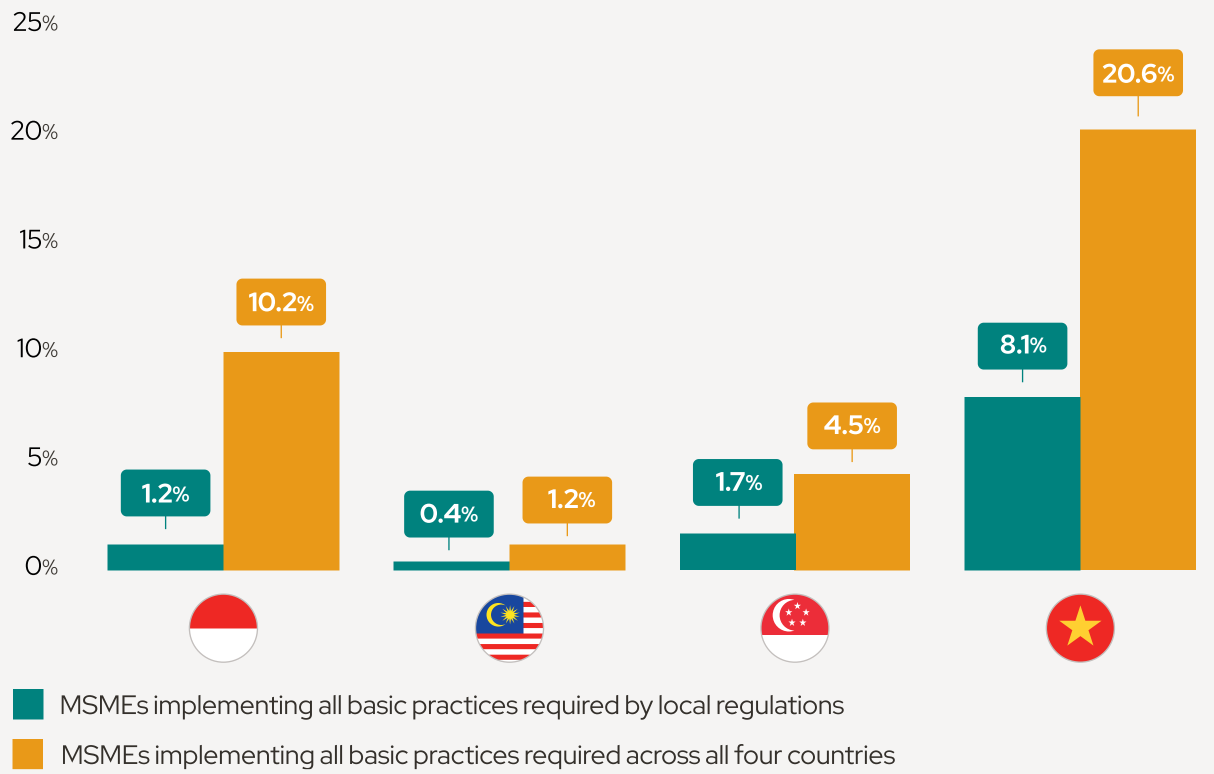
75 Indonesia first implemented waste management laws in 2008, under Law No. 18 of 2008 on Waste Management. Malaysia's Environmental Quality Act of 1974 has several sections addressing waste reduction and management, while Singapore's Environmental Public Health Act of 1987 (Waste Management) included provisions on waste management and maintaining cleanliness in the country.

To bring the two together, we analysed more than 50 local regulations across these four countries to identify the baseline (i.e. essential, basic ESG practices) that MSMEs must adhere to, in order to comply with regulatory requirements in the normal course of their business operations within their respective countries. Our analysis of such laws and regulations, while not comprehensive, illustrates the potential to position ESG adoption as an incremental exercise, because it often begins with compliance to laws that have already been in place for some time. **Our analysis indicates that a small percentage of MSMEs (11.2% for Vietnam, <5% for Indonesia, Malaysia, and Singapore) reported they have implemented all basic practices required by local regulations.** (Figure 18).

We further identified five basic practices required by regulation in all four countries (as listed in Page 14), effectively lowering the compliance threshold to focus only on the most common regulations across countries. However, even with this lower threshold, MSME compliance rates remain relatively low, suggesting challenges persist even at the most basic level of regulatory adherence. (Figure 18).

This is worrying, as it puts MSMEs at risk of penalties if enforcement on sustainable practices become stricter. This enforcement can take the form of action by national or local authorities, or by MNCs who decide that there are other regions, countries or companies which exhibit stronger ESG performance.

Figure 18: MSMEs implementing all basic practices required by local regulations, vs MSMEs implementing all basic practices required across all four countries



Weighted sample: n = 3,512 | **Survey question:** Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply. | **Note:** The common practices across all 4 countries are: [Environment] Reduce and dispose of waste properly (including recycling), [Social] Ensure fair wages and working conditions without discrimination; Safeguard employee health and safety, [Governance] Have anti-corruption safeguards; Have a team to oversee compliance with laws and regulations. Figures have been rounded to one decimal place.

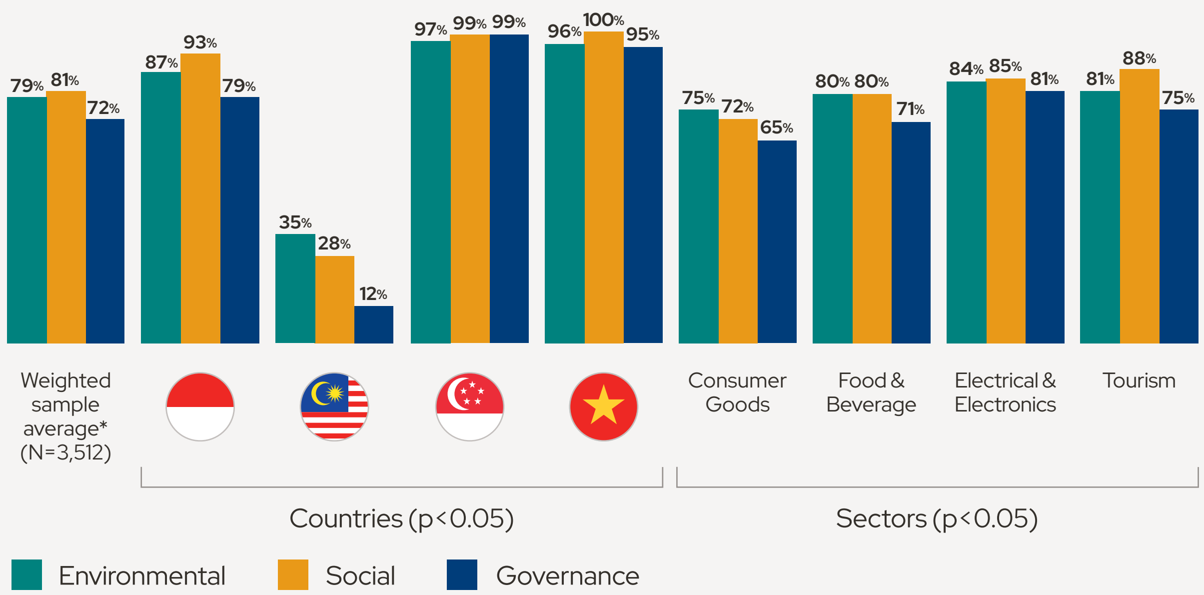
Diving into ESG Practices Most Commonly Implemented by MSMEs

Among the 21 ESG practices, social practices were the most commonly implemented. The average number of social practices (3.0) implemented exceeds that of environmental (2.4) and governance (1.9) practices consistently across countries and sectors (Figure 19b).

There is some variation across countries. MSMEs in Singapore and Vietnam are taking action to address all three components of ESG. Across industry sectors, **MSMEs in the E&E sector stand out for their actions across all three ESG pillars**, especially when compared to the F&B and consumer goods sectors, which have implemented fewer governance than environmental and social measures.

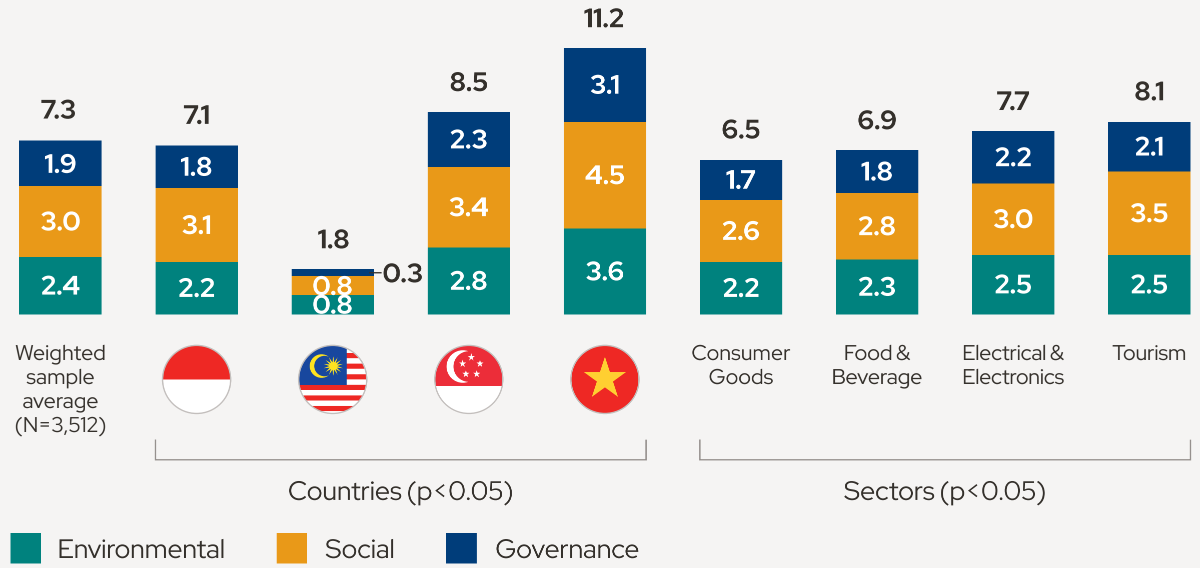
The question of why we see this particular pattern of adoption is a complex one. Before we dive into an analysis of what is driving this pattern of adoption, it is useful to review in more detail which practices are most commonly implemented.

Figure 19a: Percentage of MSMEs that have implemented at least one practice in the environment, social or governance areas, by country and industry sector



Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value below 0.05 indicates a statistically significant variation in the implementation of ESG practices across countries/industry sectors. Figures have been rounded to the nearest whole number.
* The percentage of MSMEs that have implemented at least one ESG practice, regardless of whether or not it is environmental, social or governance, is 84%

Figure 19b: Average number of ESG practices implemented per MSME, compared across countries and industry sectors



Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply. | **Note:** A p-value below 0.05 indicates a statistically significant variation in the implementation of ESG practices across countries/ industry sectors. Figures have been rounded to the nearest whole number.

ENVIRONMENTAL MEASURES: PRIORITISED FOR SUSTAINABILITY

Environmental measures have high rates of implementation, **with 79% of MSMEs having implemented at least one environmental practice**. MSMEs in Singapore and Vietnam are the most likely to report undertaking environmental practices (97% and 96% respectively) (Figure 20a).

"[W]hen you look at the news, we hear a lot about global warming, almost every other day. [We talk about] rising sea levels, El Niño, La Niña. We talk about the glaciers disappearing, photos comparing 30 years ago to now. A lot of focus is on the environment. But not really about social governance. That's why E is on top, compared to S or G."

E&E MSME in Singapore

The **most common area of practice among MSMEs is waste management (including recycling)**, which has been implemented by 68% of MSMEs. Many MSMEs have also taken action to **reduce water consumption, energy consumption (including the adoption of renewable energy), as well as carbon and other greenhouse gas emissions**.

Across the four industry sectors, **MSMEs in the tourism sector are most likely to be addressing environmental practices by developing environmentally friendly products** (52%), as well as protecting nature and biodiversity (39%). MSMEs in the E&E sector are more likely to be engaged in efforts to reduce energy use.

Figure 20a: Implementation of environmental practices, split by country

	Percentage of MSMEs (N=3,512)	Weighted sample average				
	None*	21%	13%	65%	3%	4%
	Percentage of MSMEs reporting implementation of any environmental practice (N=2,854)					
B	Reduce and dispose of waste properly (including recycling)*	68%	64%	48%	66%	80%
B	Reduce water use*	46%	38%	20%	54%	51%
B	Reduce energy use, including adopting renewable energy*	39%	19%	25%	44%	55%
B	Reduce carbon and other greenhouse gas emissions*	35%	19%	16%	47%	43%
G	Source for sustainable suppliers*	33%	34%	30%	22%	47%
G	Protect nature and biodiversity*	31%	34%	21%	22%	41%
P	Develop environmentally-friendly products (including recyclables)*	46%	50%	52%	34%	57%

Figure 20b: Implementation of environmental practices, split by industry sector

	Percentage of MSMEs (N=3,512)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
	None*	21%	25%	20%	16%	19%
	Percentage of MSMEs reporting implementation of any environmental practice (N=2,854)					
B	Reduce and dispose of waste properly (including recycling)	68%	67%	69%	67%	65%
B	Reduce water use	46%	46%	44%	41%	46%
B	Reduce energy use, including adopting renewable energy*	39%	38%	27%	51%	44%
B	Reduce carbon and other greenhouse gas emissions*	35%	36%	28%	47%	31%
G	Source for sustainable suppliers	33%	34%	34%	27%	36%
G	Protect nature and biodiversity*	31%	29%	29%	26%	39%
P	Develop environmentally-friendly products (including recyclables)*	46%	50%	47%	36%	52%

B: Basic, **G:** Good, **P:** Progressive | **Survey question:** Has your company taken any actions or adopted practices in the following areas to reduce its environmental impact? Please select all that apply. | **Note:** An asterisk indicates $p < 0.05$, signifying that practice implementation varies significantly by country/sector. Figures have been rounded to the nearest whole number.

Image © Koltiva

SOCIAL MEASURES: IMPLEMENTED FOR LOCAL IMPACT

MSMEs generally highly prioritise social measures. **81% of all MSMEs surveyed have implemented at least one social practice**, higher than environment (79%) and governance practices (72%).

Given that social practices are strongly influenced by national policies, it is unsurprising that the variation across industry sectors is less pronounced than that seen across countries. For example, concerns such as employee health and safety are deemed important by MSMEs across all industry sectors, but less so for community support and financial inclusion.

While regulatory and legal compliance is a key reason for the implementation of social practices, MSMEs in Malaysia and Vietnam have not only implemented legally mandated practices such as the provision of basic benefits to employees, but also opted to voluntarily adopt other measures that increase staff retention and reduce the risk of disruption to their business.

81%
of all MSMEs surveyed have implemented at least one of seven social practices surveyed

Figure 21a: Implementation of social practices, split by country

	Percentage of MSMEs (N=3,512)	Weighted sample average				
	None*	19%	7%	72%	1%	0%
	Percentage of MSMEs reporting any social practice (N=2,919)					
B	Safeguard employee health and safety*	68%	65%	47%	67%	78%
B	Ensure fair wages and working conditions without discrimination*	68%	67%	66%	61%	74%
B	Provide employees with training and career development*	56%	49%	53%	50%	66%
G	Track and ensure customer satisfaction*	55%	50%	35%	53%	68%
G	Provide insurance coverage to employees*	46%	29%	24%	45%	70%
P	Support well-being of local communities*	39%	41%	32%	31%	47%
P	Provide payment options and emergency advances to employees*	36%	28%	19%	37%	46%

Figure 21b: Implementation of social practices, split by industry sector

	Percentage of MSMEs (N=3,512)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
	None*	19%	28%	20%	15%	12%
	Percentage of MSMEs reporting any social practice (N=2,919)					
B	Safeguard employee health and safety	68%	68%	65%	69%	70%
B	Ensure fair wages and working conditions without discrimination*	68%	67%	70%	61%	70%
B	Provide employees with training and career development	56%	57%	53%	58%	56%
G	Track and ensure customer satisfaction*	55%	54%	50%	51%	65%
G	Provide insurance coverage to employees*	46%	48%	37%	47%	54%
P	Support well-being of local communities	39%	38%	40%	35%	39%
P	Provide payment options and emergency advances to employees	36%	34%	34%	34%	40%

B: Basic, **G:** Good, **P:** Progressive | **Survey question:** Has your company taken any actions or adopted practices in the following areas to reduce its social impact? Please select all that apply. | **Note:** An asterisk indicates $p < 0.05$, signifying that practice implementation varies significantly by country/sector. Figures have been rounded to the nearest whole number.

GOVERNANCE MEASURES: NECESSARY FOR BUSINESS

While environmental and social efforts have more tangible and outward benefits – such as cost reductions and direct impacts on revenue and profit – **governance is seen by some MSMEs to be inward-facing and is least understood in practice**. However, key governance practices have still been adopted, especially in Singapore and Vietnam, where at least one of the seven governance practices surveyed is implemented by 99% and 95% of MSMEs, respectively. (Figure 22a). Consistent with strong regulatory mandates, many MSMEs in Vietnam (70%) have teams to oversee legal and regulatory compliance. MSMEs in Malaysia and Singapore prioritise engaging external auditors or audit committees, while Indonesian MSMEs prioritise anti-corruption safeguards.

Governance measures are implemented similarly across industry sectors (Figure 22b). They are more likely to be implemented by MSMEs in the E&E and tourism sectors than in the consumer goods or F&B sectors. External auditors are more common in the consumer goods and electrical and electronics sectors, whereas MSMEs in the tourism sector are more likely to have compliance teams and data protection safeguards. Indeed, data protection is an emerging area, especially in Singapore and Vietnam.

72%

of all MSMEs surveyed have adopted at least one of seven governance practices surveyed

Figure 22a: Implementation of governance practices, split by country

	Percentage of MSMEs (N=3,512)	Weighted sample average				
None*		28%	21%	88%	1%	5%
Percentage of MSMEs reporting any governance practice (N=2,621)						
B	Have anti-corruption safeguards*	49%	62%	26%	49%	42%
B	Have a team to oversee compliance with laws and regulation*	44%	38%	37%	24%	70%
B	Maintain independent board of directors*	26%	26%	29%	14%	38%
G	Have women in senior management or leadership*	45%	47%	45%	32%	56%
G	Have cybersecurity or data protection safeguards*	43%	22%	18%	50%	56%
G	Have external auditor/audit committee*	40%	24%	53%	53%	37%
P	Publish report on ESG practices*	16%	9%	10%	13%	26%

Figure 22b: Implementation of governance practices, split by industry sector

	Percentage of MSMEs (N=3,512)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
None*		28%	35%	29%	19%	25%
Percentage of MSMEs reporting any governance practice (N=2,621)						
B	Have anti-corruption safeguards	49%	49%	52%	45%	48%
B	Have a team to oversee compliance with laws and regulation*	44%	39%	41%	43%	53%
B	Maintain independent board of directors	26%	24%	26%	26%	27%
G	Have women in senior management or leadership*	45%	45%	44%	39%	49%
G	Have cybersecurity or data protection safeguards*	43%	45%	31%	48%	53%
G	Have external auditor/audit committee*	40%	44%	35%	48%	34%
P	Publish report on ESG practices*	16%	14%	15%	17%	21%

B: Basic, **G:** Good, **P:** Progressive | **Survey question:** Has your company taken any actions or adopted practices in the following areas to ensure good governance? Please select all that apply. | **Note:** An asterisk indicates p < 0.05, signifying that practice implementation varies significantly by country/industry sector. Figures have been rounded to the nearest whole number.

MSMEs are Motivated More by Commercial Considerations, Less by Regulations

Perhaps unsurprisingly, commercial considerations such as cost reduction and increased efficiency emerged as the primary motivations behind the adoption of ESG practices among MSMEs. Attention to commercial considerations contrasts with responses regarding meeting current regulatory requirements – across all countries, less than 35% of respondents indicated that regulatory adherence was a primary motivation.

MSMEs from different countries also report additional reasons for their adoption of ESG practices. In Indonesia, the main driver is the desire to attract and retain talent (53%). Based on our roundtable discussions, Indonesian participants indicated that younger generations of workers tend to be more supportive of companies with ESG values. **In contrast, Malaysian and Vietnamese MSMEs are motivated by the opportunity to gain new clients or enter new markets (37% and 33%, respectively).** Other factors, such as securing financial incentives and adhering to industry best practices are generally seen as less compelling reasons for MSMEs to adopt ESG practices .

There is less variation across industry sectors than countries (Figure 23b). Most show relatively consistent priorities, with the top motivation for all industry sectors being cost reduction and increased efficiency. Most are also seeking to meet increased demand for sustainable products and services and to improve their branding while reducing reputational risk. Unsurprisingly, MSMEs in the E&E sector are more focused than the others on regulatory compliance and attracting new investors.

Figure 23a: Key reasons for adopting sustainability/ESG practices, split by country

Cost reduction and increased efficiency is the primary motivation for MSMEs across all 4 countries

Percentage of MSMEs reporting any motivation (N=2,843)	Weighted sample average				
Lowering costs and increasing long-run efficiency*	39%	44%	36%	31%	42%
Meeting increased demand for sustainable products and services*	33%	43%	33%	20%	37%
Improving branding and reducing reputational risk*	30%	35%	34%	22%	34%
Meeting current government/ regulatory requirements*	28%	19%	16%	31%	35%
Keeping and attracting talent*	27%	53%	13%	14%	23%
Gaining new clients/entering new markets with ESG requirements*	27%	21%	37%	26%	33%
Strong company culture and leadership commitment*	18%	8%	27%	14%	27%
Attracting new investors seeking ESG-related opportunities*	16%	11%	9%	18%	22%
Securing financial incentives (e.g., financial support schemes, tax rebates)*	15%	6%	7%	23%	15%
Following industry ESG best practices*	14%	6%	16%	22%	13%

Survey question: Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options. | **Note:** The top three motivations for each country are highlighted. An asterisk indicates $p < 0.05$, signifying that motivation varies significantly by country. Figures have been rounded to the nearest whole number.

Figure 23b: Key reasons for adopting sustainability/ESG practices, split by industry sector

MSMEs from different industry sectors have different motivations to adopt ESG practices

Percentage of MSMEs reporting any motivation (N=2,843)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
Lowering costs and increasing long-run efficiency*	39%	40%	43%	34%	35%
Meeting increased demand for sustainable products and services*	33%	33%	37%	24%	35%
Improving branding and reducing reputational risk*	30%	30%	33%	24%	32%
Meeting current government/ regulatory requirements*	28%	27%	23%	32%	29%
Keeping and attracting talent*	27%	24%	32%	19%	32%
Gaining new clients/entering new markets with ESG requirements*	27%	31%	25%	30%	25%
Strong company culture and leadership commitment*	18%	15%	15%	19%	25%
Attracting new investors seeking ESG-related opportunities*	16%	16%	14%	22%	15%
Securing financial incentives (e.g., financial support schemes, tax rebates)*	15%	18%	11%	17%	14%
Following industry ESG best practices*	14%	16%	12%	17%	13%

Survey question: Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options. | **Note:** The top three motivations for each industry sector are highlighted. An asterisk indicates $p < 0.05$, signifying that the specific motivation varies significantly by industry sector. Figures have been rounded to the nearest whole number.

Image © Mirova, Kennemer Foods International

The Need to Build a More Compelling Business Case for MSMEs to Adopt ESG Practices

The survey results and the feedback from MSMEs during the many roundtable discussions confirmed the need for a strong business case, for MSMEs to adopt ESG practices. From the perspective of MSMEs, it was clearer how ESG could contribute to the bottom rather than top line. This meant that only a small number of ESG practices, the ones which could lead to lower costs, would make sense. While there was potential to increase the top line due to potential demand for sustainable products and services, this consideration had more relevance to consumer-driven industries, especially in the immediate term.

THE IMPORTANCE OF LOWERING COSTS – THE CHALLENGES AND THE OPPORTUNITIES

It is not surprising that the most commonly implemented environmental practice is that of reducing and disposing of waste (including recycling) properly. The ecosystem around waste management is probably one of the more mature ones, compared to say renewable energy or carbon mitigation. Today, the concepts of recycling and even upcycling are more well understood, and there are also more avenues to explore circular economy initiatives.

"When we implement ESG practices, it increases costs, but actually, if we do it right or according to our capabilities and the current environment, it can sometimes save costs. I approach this from a financial perspective."

E&E MSME in Vietnam

"With MSMEs, the resources to track and implement ESG are limited. The smaller the company, the higher the relative cost. With only one to three personnel, it's very difficult to dedicate anyone solely to ESG."

E&E MSME in Malaysia

The same cannot be said for reduction of greenhouse gas emissions and reduction of energy use including adopting renewable energy, both of which are considered "basic" environment practices. **Measuring and managing emissions is not easy for an MSME. Access to renewable energy remains a challenge especially for MSMEs in more remote areas, not to mention the need to invest in capex.** These represent opportunities for solution providers to customise products and services to serve the needs of MSMEs.

THE NEED TO BUILD MORE DEMAND

Appealing to an increasingly sustainability-conscious pool of customers has also been cited as a key motivator in the implementation of environmental measures. For instance, some MSMEs in the consumer goods sector have switched to eco-friendly packaging. In the tourism sector, the implementation of environmental measures is primarily motivated by market appeal. Practices such as ecotourism, protection of biodiversity, and reduction of waste for hotels and accommodations are perceived to improve the quality of tourists' experience. MSMEs are willing to voluntarily implement environmental practices in the interest of their long-term business sustainability.

"When entering nature, we ensure that guests understand the importance of carrying out all their waste for us to handle at the end, ensuring no waste is left behind. The accommodation facilities are basic, such as simple shelters, tents, wooden houses, and we use renewable energy or solar power. Water is sourced from streams for cooking and washing. The key point is that before the journey begins, we communicate the importance of protecting the environment to all participants".

Tourism MSME in Vietnam

Image © Daya Selaras Group

The notion that adopting ESG practices can open doors to new clients and markets with ESG requirements resonates to varying degrees with MSMEs in Malaysia, Singapore, and Vietnam. Among all markets, it was less pronounced in Indonesia, possibly due to the strong domestic market potential. Perhaps more can be done to bring about stronger partnerships between prospective clients and the MSMEs. This is an area where some leadership in the industry, perhaps by industry associations, may be useful.

HOW DO MSMES EVALUATE THE RISKS OF INACTION?

It is not just whether or not MSMEs have maximised the potential to reduce costs and increase revenue. MSMEs have to realise the risks of inaction. For now, there seems greater propensity to take action in areas which are visible to regulators and stakeholders. This may be another reason why waste management is one of the most common ESG practices adopted by MSMEs.

"Once my company disposed of waste illegally by dumping it directly into a river. This had a significant impact, resulting in the death of crops in seven villages. Consequently, these villages took legal action against the company."

F&B MSME in Indonesia

Regardless, there is a general tendency to postpone implementing measures stipulated by regulations for as long as possible.

"You get fined. In all my career, I have interacted with a lot of different companies. About 75% of them, they don't react until the last minute, when you need [it urgently]. So that's why regulation is not really motivation."

E&E MSME in Singapore

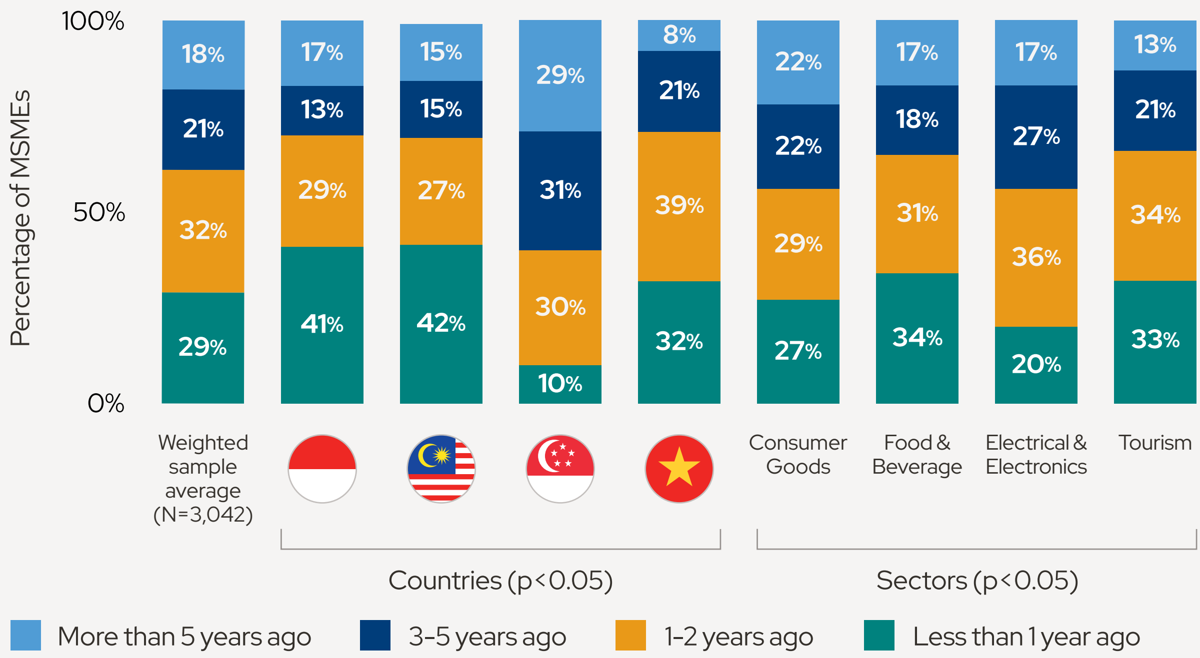
MSMEs need to better appreciate the time it takes to implement ESG practices, and to realise the risk of inaction may be to be forced out of the market completely. This possibility becomes very real, when more and more MSMEs start to comply with regulations.

The adoption of ESG practices is picking up pace. While MSMEs in Singapore may have been early adopters/implementers, with a majority (60%) having adopted their first ESG policy or practice three or more years ago, other countries are catching up. About 70% of the MSMEs in each of the other countries (Indonesia, Malaysia, and Vietnam) first adopted ESG policies/practices within the past two years. By the time of the survey in 2024, based on the regional weighted average, about **60% of the MSMEs started adopting ESG policies or implementing ESG practices within the last two years (2022–2024), while almost 40% began three years ago or earlier** (Figure 24).

The recent pick up in the adoption of ESG practices means that both regulators and customers will increasingly have the ability to make tougher decisions. For the regulator, it means that there will be less reasons to exercise leniency. For the customer, be it an MNC buyer or consumer, it means there will be more and more alternatives in the market, and the non-compliant MSME will run a greater risk of losing customers.

Figure 24: Year of initial adoption of ESG policies or practices

A majority of MSMEs began adopting ESG policies/practices within the last two years



Survey question: When did your company first begin adopting ESG policies or practices? | **Note:** A statistically significant variation in the time since first adopting ESG policies/practices across countries or industry sectors is indicated by $p < 0.05$. Figures have been rounded to the nearest whole number.

Challenges to Implementing ESG Practices

MSMEs' views on the main challenges to adopting ESG practices suggest an acceptance that ESG is here to stay. The focus was not on the "whys", but rather, the "hows".

To illustrate this, reasons such as "client base does not value it" and "leadership has other priorities" were not among the top challenges cited. Rather, the challenges were practical considerations. The top three challenges to adopting sustainability/ESG reported by MSMEs were the same across all four countries: **limited in-house skills/expertise (38% of MSMEs), low awareness of sustainability/ESG (36%)**, and high cost of implementation (36%) (Figure 25a). These barriers were also the top three faced across all four industry sectors studied (Figure 25b). In addition, MSMEs in Vietnam highlighted the difficulties encountered in sourcing sustainable suppliers and in accessing external skills/expertise.

Figure 25a: Key challenges to adopting sustainability/ESG practices, split by country

ESG adoption is hindered by limited expertise, low awareness, and high implementation cost

Percentage of MSMEs reporting any challenge to sustainability/ESG adoption (N=2,900)	Weighted sample average				
Limited in-house skills/expertise*	38%	43%	30%	38%	36%
Low awareness of sustainability/ESG *	36%	45%	47%	32%	29%
High cost of implementation*	36%	35%	47%	39%	29%
Difficulty sourcing sustainable suppliers*	26%	23%	17%	26%	36%
Benefits are not immediately seen*	23%	18%	17%	31%	22%
External skills/expertise are not accessible or affordable*	22%	23%	13%	18%	29%
High cost of certifications*	18%	18%	12%	18%	21%
Client base does not value it*	17%	8%	26%	20%	20%
Leadership has other priorities*	14%	5%	12%	10%	24%
Heavy reporting and compliance burdens*	12%	6%	5%	13%	21%

Survey question: What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options. | **Note:** The top three challenges for each country are highlighted. An asterisk indicates p < 0.05, signifying that the specific challenge varies significantly by country. Figures have been rounded to the nearest whole number.

Figure 25b: Key challenges to adopting sustainability/ESG practices, split by industry sector

The barriers to ESG adoption are similar across industry sectors

Percentage of MSMEs reporting any challenge to sustainability/ ESG adoption (N=2,900)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
Limited in-house skills/expertise	38%	40%	40%	33%	36%
Low awareness of sustainability/ESG*	36%	38%	40%	29%	35%
High cost of implementation	36%	38%	37%	33%	34%
Difficulty sourcing sustainable suppliers*	26%	31%	26%	24%	24%
Benefits are not immediately seen*	23%	24%	19%	27%	24%
External skills/expertise are not accessible or affordable*	22%	20%	21%	21%	26%
High cost of certifications	18%	17%	19%	18%	18%
Client base does not value it*	17%	17%	14%	21%	23%
Leadership has other priorities*	14%	12%	11%	14%	19%
Heavy reporting and compliance burdens	12%	13%	10%	13%	14%

Survey question: What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options. | **Note:** The top three challenges for each industry sector are highlighted. An asterisk indicates $p < 0.05$, signifying that the specific challenge varies significantly by industry sector. Figures have been rounded to the nearest whole number.

CAPACITY AND CAPABILITY ISSUES

Between internal and external expertise, MSMEs had a clear preference for relying on internal expertise among in-house employees. Whilst MSMEs from Indonesia and Malaysia exhibited a lower awareness of ESG and hence ranked awareness as the top issue, the experience of Singapore and Vietnam shows that once awareness is overcome, in-house skills and expertise quickly become essential.

FOCUS ON INTERNAL EXPERTISE LEADS TO CAPACITY ISSUES

MSMEs perceive ESG implementation as a significant drain on human resources. Roles in MSMEs are often multi-functional, leaving little capacity for specialised tasks. In the course of the roundtable discussions, MSMEs in Singapore and Malaysia shared their concerns about ESG-related processes taking up considerable time for their already stretched staff. MSMEs feel that they are placed at a significant disadvantage compared to larger companies.

"For my company, I was not employed for this role or to take on this portfolio, but [it was assigned to me as I] can do this based on [my past] interactions with a lot of different things. They didn't specifically go out and hire someone."

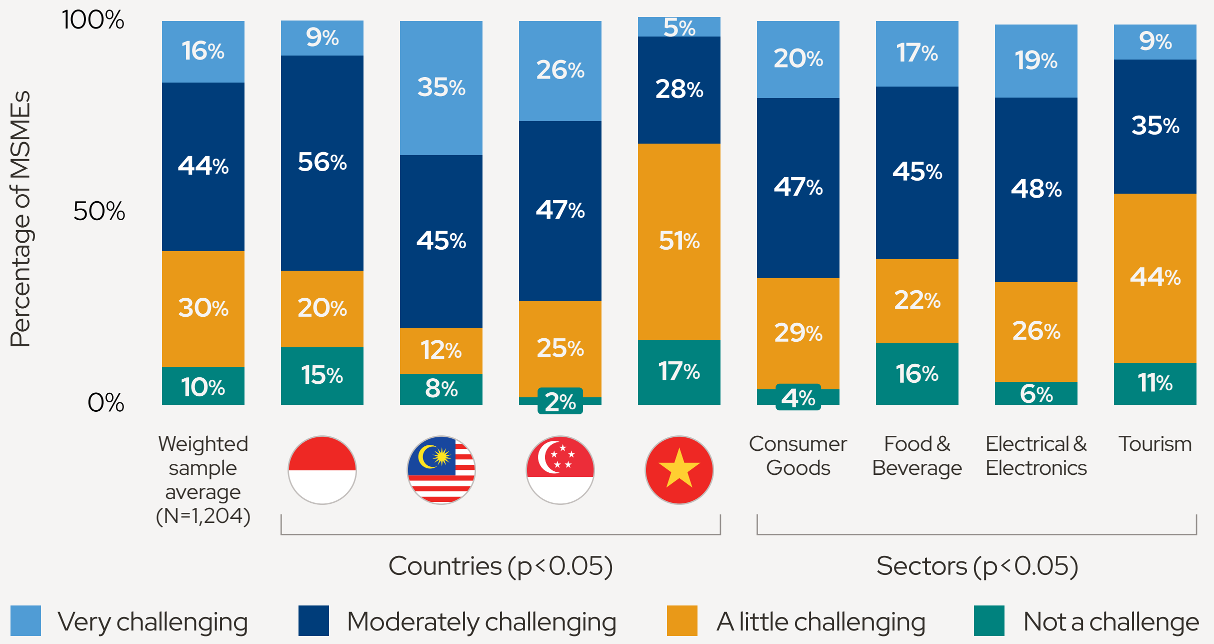
E&E MSME in Singapore

"The biggest challenge is personnel; we have no staff to research and develop a specific plan."

Tourism MSME in Vietnam

Even if the MSME were willing to hire for ESG roles, this may not be easy. Across the countries and sectors studied, **the majority of MSMEs report facing moderate to significant challenges in hiring staff for sustainability/ ESG roles**.

Figure 26: Challenges faced in hiring new staff



Survey question: How challenging is it for your company to hire new staff to work on sustainability/ESG? | **Note:** Figures have been rounded to the nearest whole number.

NEED TO STRIKE BETTER BALANCE BETWEEN INTERNAL AND EXTERNAL EXPERTISE

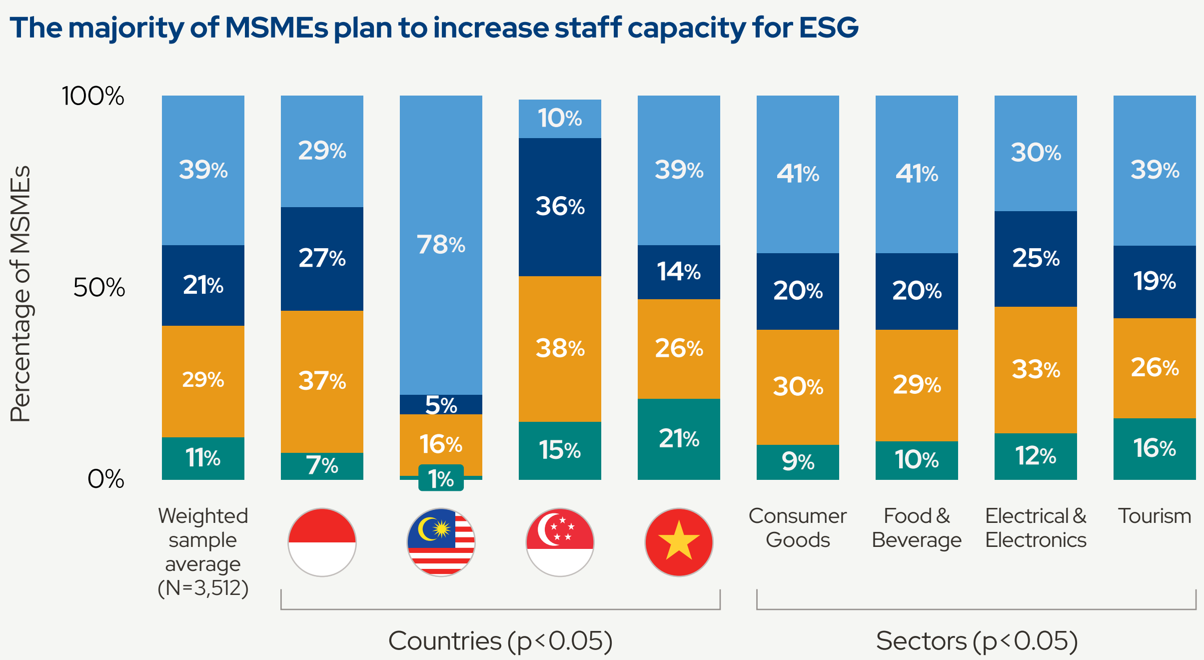
Whilst the limitation in internal expertise ranked as the top challenge, the inaccessibility of external expertise ranked 6th among the list of 10 challenges. **The clear preference for internal expertise deserves much more attention**, and perhaps some shifts.

Firstly, this preference points to the belief that existing staff can be trained to implement ESG practices and that this staff can do it reasonably well. In fact, **the preference is to train an existing staff, compared to engaging external service providers even for specific assignments**.

Realistically, even if internal staff could be identified to implement ESG practices, a gap in knowledge and practices can lead to ineffective and incomplete implementation. For example, roundtable participants noted a general lack of understanding and expertise regarding ESG among MSME managers and stakeholders. This was seen in countries with both lower and higher awareness levels, further reinforcing that **widespread awareness does not always translate into deeper understanding, desire for action, or ability to take action**.

Secondly, this preference also suggests an opportunity for external service providers to revisit their product or service offerings, making them more visible and accessible to MSMEs. ESG frameworks can be complex to understand, and navigating these frameworks is sometimes best left to qualified personnel who can be engaged on a need basis at a price point MSMEs can afford. If ESG professionals can help assuage MSMEs of their concerns, this will go a long way to make the hiring of external expertise a more accepted practice.

Figure 27: Plans to hire or train staff for sustainability/ESG in the next 12 months



Survey question: In the next 12 months, do you plan to hire or train staff to work on sustainability/ESG? | **Note:** A statistically significant variation in the staff hiring/training plans across countries or industry sectors is indicated by $p < 0.05$. Figures have been rounded to the nearest whole number.

"There's no level playing field nor template that says 'when you do this, this is what you are saving for the future, for the downstream [or] what is then incorporated'. We are harnessing solar energy, right? But we don't see the report, from the telcos, for example, to see how much energy is being harnessed, how much is being saved, how much carbon footprint is actually being reduced."

E&E MSME in Malaysia

"Reducing costs in ESG practices carries more risks than increasing revenue due to potential failure... Another challenge is convincing shareholders to agree on the investment."

E&E MSME in Vietnam

There are numerous ESG solutions and training programmes available, but it is important to refine these offerings to better meet the needs of MSMEs. This can alleviate the pressure on MSMEs to implement ESG practices completely on their own.

This can apply to the full suite of ESG practices, including those relating to governance. Some MSMEs find these unintuitive and difficult to adopt, especially family-owned businesses that may resist changing their decision-making practices. Tailoring solutions to such MSMEs can increase adoption and improve the ESG practices of these businesses.

HIGH FINANCIAL COST OF ESG IMPLEMENTATION

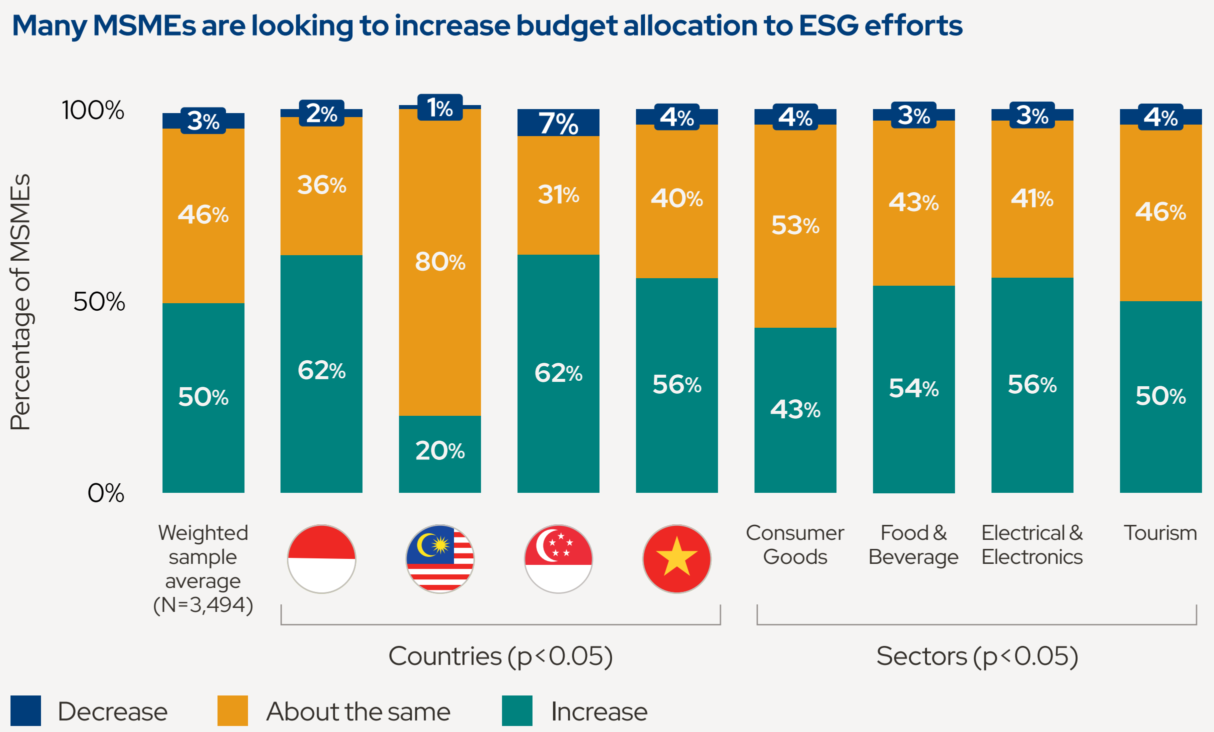
MSMEs interviewed highlighted the significant financial costs associated with ESG implementation, citing examples such as sourcing for higher quality but more expensive ESG-compliant materials, investments in technologies and infrastructure, retraining staff, and high licensing fees for product labels.

MSMEs often lack a dedicated budget for ESG, and even if they have one, the allocation is generally modest.

Despite increasing awareness and demand among customers for ESG-compliant products and services, customers are still price-sensitive and unwilling to pay higher prices that would otherwise offset the MSMEs' investment in ESG practices. **Faced with the prospect of being the sole bearer of rising costs, MSMEs may be disinclined or have greater reluctance to pursue ESG initiatives.**

Nonetheless, the data suggests that MSMEs have accepted the need to do more, and are planning to set aside more budget for this (Figure 28).

Figure 28: Expected change in sustainability/ESG budget by 2027



Survey question: [This question is not asked if company has no plans to adopt and is currently not adopting any practices] Thinking about three years from now (2027), do you think your company budget for sustainability/ESG is likely to increase, decrease or stay the same? | **Note:** A statistically significant variation in the planned ESG budget allocation across countries/ industry sectors is indicated by $p < 0.05$. Figures have been rounded to the nearest whole number.

CHALLENGES RELATED TO ESG DATA COLLECTION AND REPORTING

Overall, the most prevalent issue for MSMEs is that it is **difficult and costly to collect timely and accurate data**, as reported by 45% of the MSMEs when describing their challenges in tracking and reporting data (Figure 29a). Other common barriers are the lack of industry-wide standards, and the lack of affordable, appropriate technology to facilitate compliance and reporting.

Country analysis showed that the absence of industry-wide sustainability/ESG standards is another commonly cited barrier in Indonesia, Malaysia, and Vietnam, impacting approximately two in five MSME respondents. In Singapore, there is a particularly significant challenge arising from incompatibility with existing data collection systems (46%), which is much higher than the regional weighted average of 31%. In contrast, the lack of industry-wide standards is less problematic. It is notable that while data verification, complicated reporting platforms, and difficulty in engaging stakeholders are less frequently cited as barriers, MSME respondents in Vietnam (almost 30%) report these challenges more often than those in the other countries.

Consistent with other findings, **the variation in ESG reporting challenges across the industry sectors is smaller than the variation between countries** (Figure 29b). Difficulties in data collection, multiple standards, and access to technology are common across sectors, as is incompatibility with existing data collection. **Therefore, affordable, appropriate technology may benefit most sectors.**

The lack of standardised guidelines, high costs of data collection and the presence of multiple and sometimes conflicting data collection frameworks often impede the ability of MSMEs to measure, much less improve, the quality of their ESG policy implementation. This is a primary driver of the gap between awareness and practice. For instance, MSMEs in Singapore consider the management of carbon emissions to be important but are dissuaded by difficulty in measurement. There is thus an **urgent need for a reliable, unified source of ESG information**.

Figure 29a: Challenges in tracking, reporting, and collecting sustainability/ESG data, split by country

Percentage of MSMEs reporting any challenge in tracking and reporting sustainability/ESG practices (N=2,553)	Weighted sample average				
Difficult/costly to collect timely, accurate new data*	45%	35%	49%	53%	46%
Lack of industry-wide sustainability/ESG standards*	35%	41%	43%	28%	37%
Lack of affordable, appropriate technology*	35%	29%	41%	37%	36%
Lack of affordable, appropriate training*	33%	34%	45%	30%	32%
Not compatible with/cannot use existing data collection*	31%	22%	18%	46%	24%
Difficult to verify data*	22%	22%	32%	12%	30%
Complicated sustainability/ESG reporting platforms*	19%	14%	17%	15%	28%
Difficult to engage stakeholders*	17%	16%	6%	8%	29%

Figure 29b: Challenges in tracking, reporting, and collecting sustainability/ESG data, split by industry sector

Percentage of MSMEs reporting any challenge in tracking and reporting sustainability/ESG practices (N=2,553)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
Difficult/costly to collect timely, accurate new data*	45%	49%	42%	49%	42%
Lack of industry-wide sustainability/ESG standards*	35%	31%	35%	36%	41%
Lack of affordable, appropriate technology	35%	35%	35%	32%	38%
Lack of affordable, appropriate training*	33%	32%	35%	27%	36%
Not compatible with/cannot use existing data collection*	31%	35%	27%	35%	28%
Difficult to verify data	22%	19%	23%	22%	24%
Complicated sustainability/ESG reporting platforms*	19%	18%	17%	19%	24%
Difficult to engage stakeholders	17%	16%	16%	16%	21%

Survey question: : (1) What challenges does your company face related to tracking and reporting its sustainability/ESG practices? Please select up to 3 options that apply. (2) What challenges prevent your company from collecting data on its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top three challenges for each country/ industry sector are highlighted. An asterisk indicates p < 0.05, signifying that the specific challenge varies significantly by country/industry sector. Figures have been rounded to the nearest whole number.

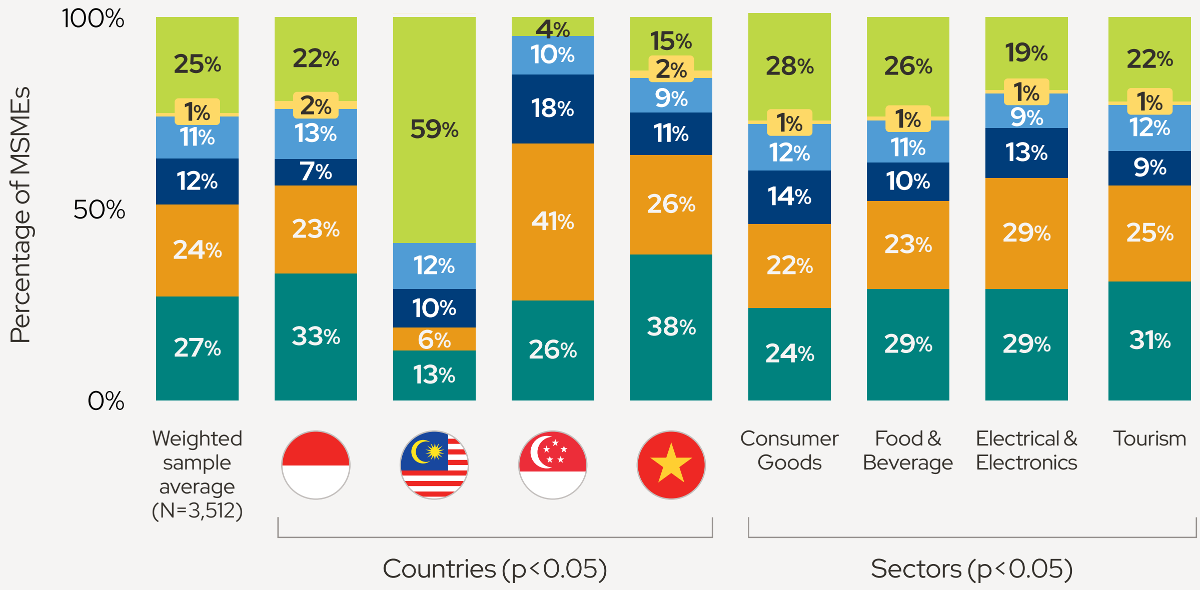
Future Outlook

A GROWING COMMITMENT TO ESG PRACTICES

In Indonesia, Singapore, and Vietnam, 63%-85% of MSMEs reported plans to expand or begin new ESG practices, with 51% planning to do so within the next three years (Figure 30). MSMEs in the E&E and tourism sectors report slightly higher interest in expanding their ESG practices. Only a small fraction (10%) of MSMEs intend to maintain their current ESG status, with a notable proportion being uncertain about future plans. A very small percentage (2% or less) of MSMEs with existing ESG practices intend to scale back.

We also asked about motivations to adopt sustainability/ESG practices in the future. The results were a mix of an increasing acknowledgement of the potential to reap business benefits, and more tempered expectations of regulatory requirements. The **potential to gain new clients is an even more powerful motivator**, while meeting regulatory requirements increased in importance in Indonesia and Malaysia but fell in Singapore and Vietnam. These differences are clear regardless of sector.

Figure 30: More than 60% of MSMEs have future plans to expand ESG practices



Survey question: Does your company aspire to further increase or initiate new sustainability/ESG policies or practices in the future? | **Note:** A statistically significant variation in plans across countries/industry sectors is indicated by $p < 0.05$. Figures have been rounded to the nearest whole number.

Figure 31a: Key benefits and motivating factors for future adoption of sustainability/ESG practices, split by country

Percentage of MSMEs reporting any motivation (N=2,898)	Weighted sample average				
Lowering costs and increasing long-run efficiency	38%	40%	33%	39%	36%
Meeting increased demand for sustainable products and services*	35%	39%	43%	31%	35%
Gaining new clients / entering new markets with ESG requirements*	32%	28%	46%	24%	39%
Keeping and attracting talent*	31%	50%	13%	29%	22%
Improving branding and reducing reputational risk*	30%	29%	37%	25%	34%
Meeting government/ regulatory requirements*	22%	19%	21%	21%	26%
Attracting new investors seeking ESG-related opportunities*	19%	13%	14%	17%	29%
Securing financial incentives (e.g., financial support schemes, tax rebates)*	16%	8%	11%	19%	23%
Strong company culture and leadership commitment*	13%	7%	17%	11%	20%
Following industry ESG best practices*	13%	5%	11%	18%	17%

Survey question: What are the main benefits and motivating factors for your company to adopt sustainability/ESG practices in the future? Please select up to 3 options that apply. | **Note:** The top three motivations for each country are highlighted. An asterisk indicates p < 0.05, signifying that the specific motivation varies significantly by country. Figures have been rounded to the nearest whole number.

Figure 31b: Key benefits and motivating factors for future adoption of sustainability/ESG practices, split by industry sector

Percentage of MSMEs reporting any motivation (N=2,898)	Weighted sample average	Consumer goods	Food & Beverage	Electrical & Electronics	Tourism
Lowering costs and increasing long-run efficiency	38%	38%	40%	35%	35%
Meeting increased demand for sustainable products and services	35%	36%	37%	32%	36%
Gaining new clients / entering new markets with ESG requirements	32%	35%	32%	29%	31%
Keeping and attracting talent*	31%	28%	34%	23%	34%
Improving branding and reducing reputational risk	30%	30%	30%	29%	32%
Meeting government/ regulatory requirements	22%	21%	21%	23%	23%
Attracting new investors seeking ESG-related opportunities*	19%	20%	17%	25%	16%
Securing financial incentives (e.g., financial support schemes, tax rebates)*	16%	15%	15%	18%	19%
Strong company culture and leadership commitment*	13%	12%	11%	12%	19%
Following industry ESG best practices*	13%	15%	10%	15%	14%

Survey question: What are the main benefits and motivating factors for your company to adopt sustainability/ESG practices in the future? Please select up to 3 options that apply. | **Note:** The top three motivations for each industry sector are highlighted. An asterisk indicates $p < 0.05$, signifying that the specific motivation varies significantly by industry sector. Figures have been rounded to the nearest whole number.

To make these shifts, **leadership will be key in driving ESG implementation** especially in environments with low awareness or less stringent regulations. Having strong leaders who make ESG a priority will be pivotal. Further, MSMEs will need to appeal to environmentally conscious younger workers to shore up the talent needed. In our roundtable discussions, several MSMEs noted they have not only implemented legally mandated practices but also opted to voluntarily adopt other measures that increase staff retention and reduce business disruption risks. **MSMEs recognise the importance of customer satisfaction for business stability.** Industry sectors that interact directly with their customers, such as tourism, consider social measures particularly critical. Some MSMEs even view both staff and consumer satisfaction as intertwined.

"We need to have support policies to retain workers. This will save on recruitment and training costs, while also ensuring sufficient manpower for production during peak seasons."

Consumer goods MSME in Vietnam

"The employee is needed to serve the customer. We have to make them happy, so that the customer can be happy. Not happy employees, not happy customers."

E&E MSME in Singapore

Herein lies the massive opportunity for MNCs, financial institutions, investors, and emerging solution providers to provide an array of approaches to support MSMEs in their transition. In subsequent chapters, we highlight key drivers and incentives at a sector-level, the main challenges each of the sectors face in terms of key sustainability issues, and the ways stakeholders are innovating to address them.

03 Recommendations

Image © Daya Selaras Group

We have seen the diversity of needs, practices, and challenges faced by MSMEs in ESG implementation. Awareness and practice vary significantly by country, though where ESG practices are implemented, common motivations to do so include cost savings, market demand, and to a lesser extent regulatory compliance.

As expected, for most MSMEs, meeting immediate business needs is of paramount importance. ESG efforts are relegated to a lower priority. Key barriers to ESG adoption include high costs, limited knowledge and expertise, and lack of awareness. Only a minority of MSMEs have firmwide policies to support ESG adoption or adopt recognised ESG standards, and governance practices are the least implemented because they are perceived to be complex and without direct, immediate benefits. Gaps in awareness, knowledge, and skills impact not only the planning and implementation of ESG practices. MSMEs also face further challenges when collecting and reporting ESG data.

This is of great concern. Because of the selection criteria for the MSMEs we surveyed, what we have captured are the views of MSMEs that already have more reason to be aware of and implement ESG practices. It is heartening to see that **there are real commercial reasons to adopt ESG practices**, and to know that **more than 60% of the MSMEs surveyed have future plans to expand or begin new sustainability or ESG practices within the next 3 years**.

And yet, the challenges are real. Our conversations with different actors in the ecosystem, including investors, financial institutions, government agencies, industry associations, corporate leaders, or solution providers, suggest many are doing what they can to encourage ESG adoption. What emerged was a **strong need for an ecosystem approach where stakeholders across public and private sectors to come together to raise the base for MSMEs in terms of their ESG and sustainability commitments and capabilities**. Given disruptions to the global trade environment, **it will be even more important for stakeholders across the ecosystem to come together and support MSMEs through looming economic difficulty**.

Drawing from our study findings, we highlight **five key areas** of intervention to advance sustainable practices among MSMEs.

Five Recommendations

1. **Make ESG clear and simple**
2. **Build capacity, both internal and external**
3. **Encourage more win-win customer-supplier partnerships**
4. **Invest in innovative, MSME-targeted solutions**
5. **Finance the change**

01 Make ESG Clear and Simple

There remains a pressing need to inform and urge MSMEs to make the transition toward more sustainable business models and adopt ESG practices. According to our survey, **60-80% of MSMEs are familiar with ESG** but to different extents. Nevertheless, this is a promising base for various initiatives to leverage.

Government bodies and industry associations need to take the lead, as they are the main sources of guidance which MSMEs rely on.

Firstly, it is crucial to **reframe basic communication to MSMEs on ESG concepts and highlight all parts equally, as well as to emphasise the commercial benefits of ESG practices**. Despite widespread implementation, social practices are often seen as disconnected from broader environmental and governance goals. Emphasing the commercial benefits of ESG practices, while ensuring minimal disruption to operations is crucial. MSMEs need to understand that adopting ESG practices will, in time, become crucial if they are to meet supplier requirements of MNCs, maintain their place in supply chains, and attract new customers. In other words, failure to adopt ESG practices may lead to exclusion from global supply chains in the future.

Secondly, **MSMEs need to be assured that they are not necessarily starting from a blank slate, and that adopting ESG practices is not too ambitious a goal**. In fact, some MSMEs may be already implementing ESG practices without realising that they are doing so. Support will be required to help such MSMEs convey what ESG practices they are already undertaking. Supporting MSMEs to engage in peer-to-peer sharing will also allow companies to learn from each other within the context of their own industries. Through showcasing their success stories, more MSMEs – and especially their leadership – may be more motivated to adopt ESG practices as well.

TATWIN'S EMBRACE OF ESG PRACTICES

TATWIN is a producer and exporter of latex concentrate based in Thailand, situated several tiers deep in consumer goods supply chain. A major upstream manufacturer of latex, TATWIN works with a trusted customer base to supply its latex concentrate for use in all-natural latex-based products, including adhesives, latex foam products, household gloves, and surgical gloves.

Since 2016, TATWIN has implemented significant changes to address sustainability and human rights issues in its supply chains. This has been influenced by various factors, including the strategic advantage offered by sustainable practices when securing large customers, compliance with global trends and sustainability standards, and mitigating high-risk factors associated with the rubber industry. Thailand's rubber industry is heavily reliant on migrant workers, especially from Myanmar, and this makes the risk of unethical recruitment and worker exploitation high. This is pertinent especially if the recruitment and unemployment conditions of workers is not carefully scrutinised.

Migrant workers form the backbone of TATWIN's natural rubber latex supply chain, ranging from tapping trees to operating production lines. TATWIN has established a robust system for social due diligence, including through worker voice surveys, grievance mechanisms and remediation, and continuous refinement of its labour risk monitoring, as aligned with the UN Guiding Principles on Business and Human Rights. TATWIN also undertook an initiative supported by the International Organisation for Migration, Diginex, and IKEA. Diginex provided eMin, a mobile-optimised, blockchain-based platform, which TATWIN used to collect feedback from migrant workers on their recruitment experiences and ensure that TATWIN, not the workers, paid for recruitment fees. As a customer of TATWIN committed to responsible rubber supply chains, IKEA was an active supporter of the project.[76]

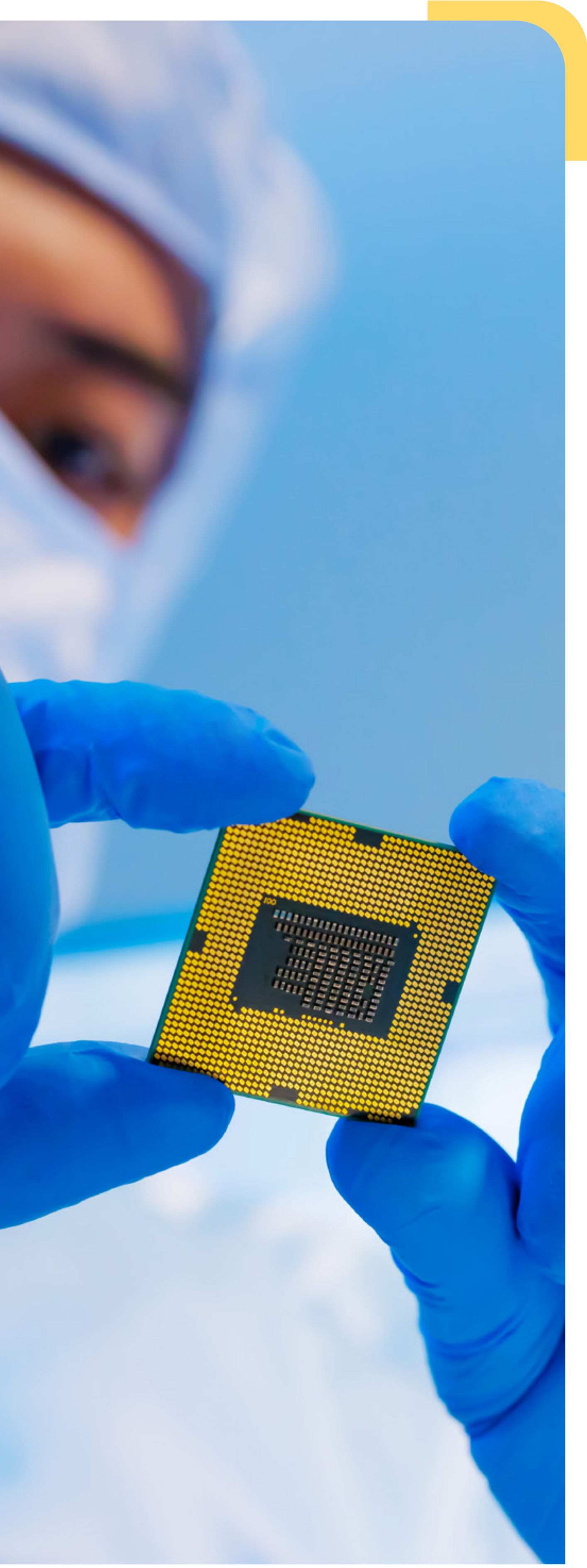
TATWIN's social due diligence is also coupled with environmental due diligence. TATWIN uses internationally recognised standards like ISO 14001 for measuring environmental impacts and traceability systems to track the origin of raw materials. This is important given that deforestation, habitat destruction, and soil and waterway pollution have been key issues in rubber production in Thailand. TATWIN's robust social and environmental management system provides a useful reference point for other SMEs that seek to put their sustainability commitments into action.

"We understand that we run a high-risk business in terms of sustainability and human rights, so we have implemented a lot of strategic changes since 2016. We have been recognised internationally for our work and studies have been done on how we have transformed as an SME with limited resources. We plan to be a part of the global shift in towards the carbon neutral economy and see rubber as having a potentially important role in it. These have been our first steps toward transforming the company into what we envisioned it to be."

Jerry Foo, Executive Director, and Keelong Foo, Director, TATWIN


Image © TATWIN

76 The International Organisation for Migration (2021): IOM, Diginex, IKEA, and Tat Win Join Forces to Protect Migrant Workers in the Thai Rubber Industry.



02 Build Capacity, Both Internal and External

While establishing the foundation for ESG adoption, creating impetus and motivation, and providing targeted support form essential building blocks encouraging MSMEs to make the shift toward sustainable practices, the ultimate goal is to enable MSMEs to independently sustain and evolve their own ESG practices for long-term impact.

However, **MSMEs face the challenge of limited in-house skills and expertise**. To address this, It is important to develop **industry-specific toolkits or educational materials** which incorporate global industry-relevant standards and local expert inputs. These resources should be simple, actionable, and tailored to each industry, with industry associations playing a key role.

MSMEs also need to recognise that not everything needs to be done in-house. MSMEs should leverage external expertise. An innovative idea is that of the **"Chief Sustainability Officer-as-a-Service (CSOaaS)"** which provides **ad-hoc support and personalised guidance to MSMEs** and deepens ESG practice implementation.

SINGAPORE MANUFACTURING FEDERATION'S CHIEF SUSTAINABILITY OFFICER-AS-A-SERVICE (CSOAAS) PROGRAMME

The Chief Sustainability Officer-as-a-Service (CSOaaS) was launched by the **Singapore Manufacturing Federation** (SMF) in 2024 with the aim of supporting Singapore SMEs, starting with manufacturers, in developing and implementing sustainability strategies. This initiative is part of SMF's broader Green Excellence Programme (GEM/GEB Mark) and reflects SMF's commitment to sustainability, social responsibility, and skills development. The SMF CSOaaS programme is supported by Enterprise Singapore and it collaborates with the Agency for Science, Technology and Research (A*STAR) and other eco-system partners to help SMEs in their sustainability journey.

SMF represents over 5,000 member companies including SMEs, MNCs, and other affiliate members, representing the interests of the manufacturing sector. Its industry groups include food & beverage, electrical and electronics, energy & chemicals, advanced engineering and manufacturing, smart automation, and packaging, among others.

While sustainability is increasingly becoming a business imperative, many SMEs struggle with compliance due to limited resources, technical expertise, and leadership commitment. One of the biggest challenges they face is meeting emissions disclosure requirements imposed by multinational customers. However, SMF sees sustainability not merely as a compliance obligation but as a strategic necessity that strengthens long-term competitiveness.

For SMEs, the push toward sustainability is driven by several factors. Increasing regulatory requirements in global supply chains, rising customer expectations, and the inclusion of sustainability criteria in government tenders are all forcing companies to reassess their environmental and social impact. Despite these pressures, many SMEs face difficulties in adopting sustainable practices due to a lack of leadership buy-in, insufficient training, and an absence of clear strategies. SMF recognises that SMEs need practical, cost-effective, and scalable solutions that align with their operational capabilities, financial resources, and business goals.

SMF's CSOaaS programme provides companies with on-demand access to sustainability expertise without the financial burden of hiring a full-time Chief Sustainability Officer (CSO). Rather than embedding a CSO permanently within an SME, the CSOaaS programme allows companies to engage with sustainability specialists who can develop roadmaps, collect and report ESG data, and provide strategic guidance. This approach ensures that businesses receive targeted support at different stages of their sustainability journey. Participating SMEs receive grants covering up to 70% of programme costs, making sustainability more accessible.

The CSOaaS programme follows a structured, four-phase approach. It begins with awareness training, equipping employees with foundational sustainability knowledge. Following this, SMEs undergo a gap assessment, which includes Scope 1 and 2 emissions calculations to establish a baseline and identify areas for improvement. With these insights, sustainability experts work with companies to develop a prioritised roadmap that outlines key initiatives, timelines, and resources needed to achieve their sustainability goals. In the final phase, SMEs are connected with SMF's ecosystem partners to implement sustainable solutions. Successful companies are awarded the Green Excellence for Manufacturing/Business Mark (GEM/GEB), tiered at Bronze, Silver, and Gold.

Examples of companies that have benefitted from SMF's CSOaaS programme included **Tai Sin Electric**, a Singapore-based listed electrical cable and wire manufacturing company with plants in Singapore, Malaysia, and Vietnam, and **Cyclect Group**, a Singapore-based company providing a broad spectrum of engineering services and products. Tai Sin Electric is a sustainability leader in its industry, having published its first sustainability report in 2018 and committed to collecting data on its Scope 1, 2, and 3 emissions. Tai Sin Electric is tapping on SMF's CSOaaS to support its ESG strategy planning, framework, implementation and training for its cable and wire manufacturing group.

For Cyclect Group, it taps on CSOaaS programme to provide ESG advisory services on sustainability reporting and strategy, support training for their staff, contributing to improved sustainability performance and new business offerings, such as their Cooling-as-a-Service offering, which aligns with sustainable business innovation.

Beyond operational improvements, the CSOaaS programme helps SMEs access sustainability-linked financing. SMF is actively collaborating with financial institutions to develop sustainability-linked loans that require companies to meet specific ESG improvement targets. By demonstrating progress through sustainability reports developed in the programme, SMEs can unlock green financing to invest in further sustainability initiatives and drive continuous improvement.

SMF strongly advocates the business case for sustainability, emphasising that it is not merely a compliance exercise but a competitive advantage. Companies that integrate sustainable practices into their operations benefit from greater cost efficiency, enhanced innovation, and access to environmentally engaged markets. Furthermore, proactive ESG compliance not only helps businesses meet regulatory requirements and avoid penalties but also improves their corporate reputation, increasing customer trust and stakeholder confidence.

With the CSOaaS programme, SMF is empowering SMEs to integrate sustainability into their business strategy, equipping them with the expertise, tools, and financial support needed to build a more resilient, competitive, and environmentally responsible manufacturing sector in Singapore. Rather than offering an automated software solution, SMF focuses on practical, hands-on guidance that aligns with the unique needs of SMEs.

"What differentiates our CSO-as-a-Service programme is the human touch rather than just providing a software solution. Instead of a one-size-fits-all approach, we break sustainability support into tailored, flexible components, allowing SMEs to pay only for what they need. This not only reduces their financial burden but also ensures they receive targeted, practical guidance. Our long-term goal is not for SMEs to rely on us forever, but to embed sustainability as part of their business DNA."

Clara Kwan, Chief Sustainability Officer, Singapore Manufacturing Federation

03 Encourage More Win-Win Customer-Supplier Partnerships

The top predictor for MSMEs to adopt ESG practices, other than the country the MSME is based in, is the **presence of MNC clients**. MSMEs having an overseas orientation in the form of MNC clients increases the level of ESG practice adoption **(+1.1 practice on average)**. This underscores the **influential role corporate buyers can play in elevating sustainability across supply chains**. Among the forms of support MSMEs value most, preferential contracting ranks highest, followed closely by longer-term contracts and fairer pricing. Furthermore, implementation of ESG requirements for government procurement can also send the same message to SME suppliers.

Figure 32: Corporate client incentives for increasing ESG practices

Percentage of MSMEs reporting any form of incentive (N=2,327)	Weighted sample average				
Longer-term contracts guaranteeing steady business*	50%	65%	38%	40%	48%
Higher prices for sustainable products or services*	37%	36%	23%	42%	38%
Preferential payment terms such as shorter payment cycles*	27%	22%	13%	31%	33%
Guaranteed minimum purchase volumes*	25%	19%	26%	24%	32%
Bonuses or incentives for meeting sustainability targets*	23%	23%	24%	28%	19%
Grants, subsidies or awards*	20%	16%	59%	18%	15%
Specialised training and upskilling on ESG fundamentals and practices*	20%	19%	11%	12%	36%
Technology such as digital tools to enable reporting and compliance*	13%	10%	5%	12%	22%
Advisory/consultancy related to sustainability/ESG *	13%	9%	6%	11%	25%

Survey question: Which types of incentives from a corporate client would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top form of support preferred by each country is highlighted. An asterisk indicates $p < 0.05$, signifying that the specific preferred support varies significantly by country. Figures have been rounded to the nearest whole number.

By offering incentives such as longer-term contracts or preferential supplier terms, MNCs have an opportunity to proactively shape and strengthen their supply chains, building resilience and ensuring compliance with increasing regulatory requirements around traceability and reporting. A McKinsey survey found that only 17% of MNCs have visibility deep into their supply chain tiers, down to Tier-3 and beyond.[77] To reach SMEs deeper in their supply chains, it will be crucial to invest in digitalisation and data management systems, as well as incentivise adoption of ESG practices not just with Tier-1 suppliers, but in their Tier-1 suppliers' own supply chains.

In doing so, **MNCs will be able to access a deeper pool of qualified suppliers**, as new regulations on supply chain transparency and reporting are expected to be enforced globally and in Southeast Asia. Additionally, MNCs are likely to continue raising sustainability expectations to meet business continuity needs and changing consumer preferences. The longer MSMEs delay action, the greater the gap between their practices and those of MNCs – and the more costly it will be to catch up. Strengthened corporate-supplier partnerships will give MSMEs the resources and motivation to adopt ESG practices more comprehensively.

77 McKinsey (2022): Taking the pulse of shifting supply chains.

AS WATSON GROUP'S HOLISTIC PARTNERSHIPS WITH SUPPLIERS

Headquartered in Hong Kong, **AS Watson Group** is the world's largest international health and beauty retailer, operating across Asia, Europe, and the Middle East. With over 16,900 stores and 1,500 pharmacies across these regions under 12 retail brands in 30 markets, AS Watson Group occupies a unique position between markets, with full visibility of the looming effects of sustainability regulations in the European Union and its effects on supply chains. As Chief Sustainability Officer Sébastien Pivet explains, "With a global presence, we are committed to aligning our practices with sustainability legislation across all our operating markets worldwide." Hence, AS Watson Group pursues a cohesive sustainability strategy across all markets as aligned with incoming regulation such as from the European Union, which emphasises corporate-supplier partnerships. AS Watson Group adopts a rigorous and holistic approach aligned with the Science Based Targets Initiative.

AS Watson Group recognises that more than 50% of its suppliers are MSMEs, and hence the ability to achieve consistency in sustainability approaches also depends on them. When being selected, all of AS Watson Group' new suppliers must endorse its Supplier Code of Conduct and undergo a stringent third-party supplier screening with 23 indicators across five categories, namely reputation and sanctions, as well as financial, environmental, social, and governance conditions. When it comes to Exclusive Brands developed by AS Watson Group, efforts are made to assess the factories' environmental compliance and to minimise the environmental impact of these Exclusive Brands products and packaging.

Through AS Watson Group's consistent communication and sharing of its expectations with suppliers in areas such as sustainable palm oil, sustainable paper (such as FSC certified or made with recycled wood-pulp), and using less or better plastics, MSMEs are encouraged to become a part of AS Watson Group' sustainability strategy while developing their own. For example, AS Watson Group has partnered with reputable third-party organisations, such as the Roundtable on Sustainable Palm Oil, to conduct training sessions and webinars to equip MSMEs with knowledge of sustainability standards and practices. AS Watson Group has observed the rise of free carbon accounting software to help SMEs with their Scope 1, 2, and 3 emissions calculations and encourage their suppliers to use such tools, to ensure that emissions from suppliers and beyond are captured as part of suppliers' reporting obligations. AS Watson Group also aims for 100% of its Exclusive Brand Products to be more environmentally friendly in terms of ingredients and packaging, by 2030.

Through their membership with amfori, a global business association that advocates for a world in which trade serves a purpose (delivering social, environmental and economic benefits for everyone), AS Watson Group seeks to improve working and environmental conditions across global supply chains. AS Watson Group is aligned with amfori's Business Social Compliance Initiative (BSCI) and Business environmental Compliance Initiative (BEPI). AS Watson Group actively engages suppliers located in high-risk countries to take the BEPI self-assessment covering 11 environmental performance areas. Following the assessment, suppliers are informed of their assessed risks and notified of the appropriate training to attend. This is delivered either by amfori or by other appointed training companies. Their progress is further monitored for improvement tracking. These underscore AS Watson Group's commitment to furthering its corporate-supplier partnerships, ensuring the adoption of ESG practices across its supply chain.

"We've broadened our horizons to support 15 UN SDGs, and we collect data on over 250 ESG KPIs such as packaging waste from our Exclusive Brand products or data from our suppliers' social audits or environmental performance."

Sébastien Pivet, Chief Sustainability Officer and Quality Assurance Director, AS Watson Group

---

04 Invest in Innovative, MSME-Targeted Solutions

Significant investments are required to enable companies to decarbonise fully and achieve net zero. A 2021 report by HSBC and Boston Consulting Group on Delivering Net Zero Supply Chains estimates that global supply chains will need US$100 trillion of investments by 2050, and that an estimated US$25 to US$50 trillion will need to be allocated to SMEs between 2020 and 2050.[78]

The need for more MSME-focused solutions presents a tremendous opportunity for solution providers, and for investors in this area. This can range from advisory services to help MSMEs navigate the plethora of ESG-related regulations, to products and services especially those related to the environment. Given the low adoption of technology solutions by MSMEs, there is also considerable space to customise such solutions for MSMEs. These solutions can be coupled with advisory services as well, to guide MSMEs in their transition towards adopting more sustainable practices.

One key example is **ESGpedia Pte Ltd** (ESGpedia), an ESG data and solutions company based in Singapore. ESGpedia seeks to address the challenges of gathering data in supply chains, especially in Southeast Asia where available information is limited, by providing more comprehensive data aggregation for improved ESG reporting. Due to the challenges companies face in ESG data collection, especially in terms of a lack of expertise or resources, ESGpedia seeks to make this process as straightforward as possible by helping them create ESG profiles and calculate emissions data accurately. ESGpedia provides the ESBN Asia-Pacific Green Deal digital assessment, which is independently verified by Bureau Veritas.

78 HSBC and BCG (2021): Delivering Net Zero Supply Chains.

"There is a pressing issue in ASEAN supply chains, which is that there is very little or almost zero ESG data available. Because so much data is incomplete, we are using our intelligence to gather or aggregate different types of data from different sources across the public domain and directly from companies. We know that Asia, and Southeast Asia especially, will be very important markets."

Benjamin Soh, Founder & Managing Director, ESGpedia

EcoVadis, another example, is a prominent global company dedicated to embedding sustainability intelligence into business decisions. Providing global, trusted, and actionable sustainability ratings, EcoVadis' insights help companies comply with ESG regulations, reduce greenhouse gas emissions, and improve the sustainability performance of their business and value chains. Active across 220 industries in 180 countries, EcoVadis supports a range of sector-specific initiatives, including the **Hospitality Alliance for Responsible Procurement (HARP)**. HARP was created by several hospitality companies with a presence in at least two continents and their key global procurement organisations. Members of the initiative include Accor, Radisson Hotel Group, Hilton, IHG Hotels & Resorts, Avendra, Entegra, Foodbuy Hospitality, and Marriott International. These members have suppliers from 31 countries across 91 supplier industries. EcoVadis' rating and analytics capabilities allow HARP visibility over their supply chains' sustainability performance and more effectively implement changes.

Beyond large clients, EcoVadis also works with financial institutions to help MSMEs strengthen their sustainable practices through tailored programmes and sustainability ratings. For example, in the OCBC SME Start-ESG Programme, EcoVadis provides holistic sustainability ratings, covering key areas like environment, labour, human rights, and sustainable procurement. This partnership supports MSMEs in obtaining sustainability credentials, improving competitiveness, obtaining ESG grants, and meeting client expectations. EcoVadis has been backed by **BeyondNetZero, General Atlantic's climate investing venture**, as well other investors such as **Astorg**, **GIC**, and **Princeville Capital's Climate Technology Fund**.

Another example is **Asuene**, a Japan-based climate technology company that specialises in carbon accounting and carbon management, helping companies manage their carbon footprint using AI and data integration technology, combined with sustainability consultants for comprehensive support. Asuene is backed by investors including **SMBC, Pavilion Capital, SBI Investment, and Sparx**.

"The challenges for companies have moved from reporting on Scope 1 and 2 to greater demand for Scope 3. It's no longer just about processing numbers but what kinds of emission factors do I use? How do I engage supply chain partners to ensure they share numbers with us? How do you educate them? How do you raise awareness? How do you ease the process of data collection? Who are the right stakeholders within the organisation? These are becoming more of the pain points in the landscape now, which makes it a complex problem combining data management, change management and process management issues."

Shu Setogawa, Director, Sales and Business Development, Asuene

However, while it is heartening that such solution providers exist, and that they also identify the MSME market as a potential customer segment, the reality is that MSMEs may not be their priority market. There remains a **gap in solutions specifically targeted at MSMEs, both in terms of product design and price point**.

Venture capital firms, including impact investors, play a crucial role in supporting early-stage innovations that offer scalable solutions, such as traceability platforms and the use of sustainable materials. Our MSME survey shows that there is increasing interest to move beyond waste management, to increasing use of renewable energy use and reducing greenhouse gas emissions (Figure 33). **Investors would do well to take advantage of this interest, and in the process play a critical role in facilitating ESG adoption across supply chains**, regardless of company size.

Investors with regional expertise are beginning to concentrate their efforts on solutions that are tailored to local needs. One example is **Touchstone Partners**, an early-stage venture capital firm founded to develop Vietnam's next generation of entrepreneurs. The firm focuses on technology startups with the potential to create a major impact on people and the environment in Vietnam. Headquartered in Ho Chi Minh City, Vietnam, the firm invests across several themes: building climate solutions, creating deeptech and robotics solutions, supporting Vietnam's economy, developing fintech innovations, improving quality of lives, and supporting supply chains in Vietnam and overseas. Some sectors of interest include smart manufacturing, clean energy transformation solutions, and sustainable agriculture.

Beyond its own investments, Touchstone has also observed a lack of catalytic funding and support platforms in Vietnam's ecosystem able to bring together different stakeholders to support climate startups. A limited funding environment in Vietnam affects the research and development stages for startups. To address this, Touchstone has helped its portfolio companies receive grants and non-dilutive funds from international foundations, as well as promote pilots with corporates and foster support from the Vietnamese government on the green economy. They have also launched key initiatives such as the **Accelerating Innovative Start-ups for Energy Efficiency (AIS4EE) programme**.

Figure 33: Top future priorities for reducing environmental impact

Percentage of MSMEs (N=3,494)		Weighted sample average				
None*		19%	10%	65%	1%	3%
Percentage of MSMEs reporting future priorities in environmental impact (N=2,892)						
B	Reduce and dispose of waste properly (including recycling)*	58%	57%	49%	59%	60%
B	Reduce energy use, including adopting renewable energy*	41%	20%	32%	58%	44%
B	Reduce carbon and other greenhouse gas emissions*	34%	20%	21%	56%	29%
B	Reduce water use*	33%	32%	18%	39%	32%
G	Protect nature and biodiversity*	25%	32%	25%	12%	30%
G	Source for sustainable suppliers*	24%	23%	27%	15%	33%
P	Develop environmentally-friendly products (including recyclables)*	37%	42%	49%	20%	49%

B: Basic, **G:** Good, **P:** Progressive | **Survey question:** What are your company's top future priorities in the area of environmental impact? Please select up to 3 options that apply. | **Note:** An asterisk indicates $p < 0.05$, signifying that the specific priority varies significantly by country. Figures have been rounded to the nearest whole number.

Another example is **East Ventures**, the pioneer and leading venture capital firm in Indonesia that invests in digital solutions, helping to solve the pain points of local communities in Indonesia and Southeast Asia. One of the themes East Ventures invests in is supply chain solutions, tapping on interest in supply chain consolidation to improve cost efficiency and sustainability. East Ventures also has a dedicated ESG team allowing them to apply a sustainability assessment framework to evaluate ESG risks and impacts before investing, as well as specific indicators that they track post-investment. East Ventures has also partnered with **Temasek Foundation** for the **Climate Impact Innovations Challenge (CIIC)**, Indonesia's largest climate innovation tech competition, since 2023. The 2025 edition of the CIIC has three tracks: **Energy Transition, Sustainable Agriculture, and Circular Economy**. The winners of the competition receive a total prize pool of Rp 10 billion (US$ 600,000) as well as global exposure and access to investors.

These examples are a good complement to the activities of the more globally-oriented players. It is heartening that we are starting to see solutions developed for the MSME market in Southeast Asia, even if these solutions are still at an early stage of development.

More effort is needed to ensure that these solution providers are incentivised not only to cater to larger companies but also to engage MSMEs, helping to reduce the barriers they face in adopting ESG practices. This represents a gap in the market that investors can step in to address.

Image © Temasek Foundation

AMASIA AND UNRAVEL CARBON: INVESTING IN SOLUTION PROVIDERS

Founded in 2013, **Amasia** is a thesis-driven, global venture capital firm currently focused on sustainability & climate. Specific thematic focuses include AI & Data for Sustainability, Circular Economy, Sustainable Supply Chains, Sustainable Cities, and Clean Energy Transition. Using a nuanced framework designed around behaviour change, Amasia invests in founders with global ambitions, from the seed to series B stages, across the United States, Southeast Asia, India, Europe, and Latin America.

Amasia invested in **Unravel Carbon** at its seed stage. Based in Singapore, Unravel Carbon is a platform that helps companies with global supply chains make data-driven decisions with their business sustainability and climate-related financial risks. Its AI-powered enterprise software helps companies measure, track, reduce, and report carbon emissions and climate risks, particularly focusing on supply chain risks and emissions exposure. Unravel Carbon aims to make sustainability management more engaging and user-friendly, which it tracks through user retention and engagement. Over 40% of Unravel Carbon's customers use it each month, with the platform being able to transform unstructured into structured carbon data in a way that is intuitive and straightforward. It is known for the granularity of insights produced that allow their customers to make actionable plans. Unravel Carbon's customers span various sectors, including fashion, telcos, finance, consumer goods, and electronics, among others.

One such customer is Global Fashion Group (GFG), a fashion and lifestyle online destination operating in Southeast Asia, Latin America, Australia, and New Zealand. GFG oversees three e-commerce platforms, namely Dafiti, Zalora, and The Iconic. Through Unravel Carbon's streamlined solution, GFG was able to improve its efficiency and effectiveness while reducing its carbon footprint. Unravel Carbon helped to streamline GFG's carbon emission calculations using both structured and unstructured data across the regions GFG serves. As a result, GFG has been better able to identify and track their data sources to data owners and pinpoint key data gaps in each region. Unravel Carbon's support has allowed the GFG to focus on improving data quality as well as prepare strategies to reduce their carbon footprint.[79]

"In my mind the biggest opportunity is bringing transparency and traceability in supply chains because once you have that, then you can figure out how to improve them. Companies want to know where their goods are going right now, and if you can tell them that they'll pay you. It makes their marketing, production, and product development more efficient."

John Kim, Board Partner, Amasia

"When we started Unravel Carbon, we realised that the sustainability journey and decarbonisation efforts have been seen as a chore. They are seen as something burdensome, tedious, and expensive. Our intent behind our product and UX was to make users look forward to using it monthly instead of mandatory once a year reporting. We were ambitious in believing that climate-driven business decisions should be business as usual for any company."

Grace Sai, Co-Founder & CEO, Unravel Carbon

---

79 Unravel Carbon (2025): Driving Supply and Demand for More Sustainable Fashion.

05 Finance the Change

While MSMEs may prefer not to have to incur debt to implement ESG measures, this may still be necessary in some situations. Our survey showed that while MSMEs see a role for the financial sector beyond lending, **lower interest rates for loans for companies meeting ESG standards and lower interest rates for sustainability-related loans** are the top types of support from financial institutions that would influence the increased adoption of sustainable practices by MSMEs.

Figure 34: Financial institution support for increasing ESG practices

Percentage of MSMEs reporting any form of support (N=2,724)	Weighted sample average				
Lower interest rates for loans for companies meeting sustainability/ ESG standards*	40%	22%	27%	50%	49%
Lower interest rates for sustainability/ESG -related loans*	39%	42%	28%	37%	42%
Grants, subsidies or prizes*	39%	25%	82%	49%	28%
Simplified applications/faster approval for sustainability/ ESG -related loans*	31%	43%	17%	18%	37%
Specialised training and upskilling on ESG fundamentals and practices*	26%	23%	15%	15%	44%
Zero collateral requirement for sustainability/ESG -related loans*	23%	37%	17%	14%	22%
Advisory/consultancy related to sustainability/ESG *	23%	15%	5%	33%	23%
Technology such as digital tools to enable reporting and compliance*	18%	12%	7%	14%	30%

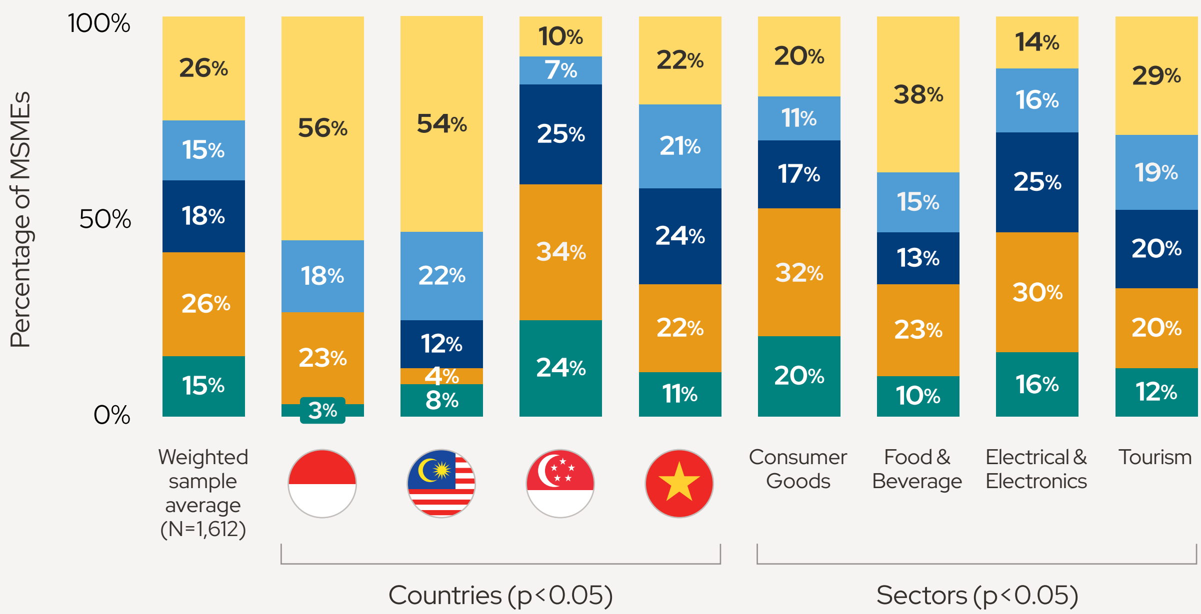
Survey question: Which types of support from financial institutions would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top form of support preferred by each country is highlighted. An asterisk indicates $p < 0.05$, signifying that the specific preferred support varies significantly by country. Figures have been rounded to the nearest whole number.

Image © Arcstone

Our discussions with various financial institutions showed that many banks already provide sustainability-related loans. Some expressed frustration that the take up rate for such loans were low, and wondered if there was a mismatch of expectations in terms of the interest rates MSMEs were willing to pay. Hence, we also asked MSMEs what levels of discounts they expected.

Aside from cost differentials, there is **significant scope for financial institutions to accelerate ESG adoption across diverse MSME segments by recognising early adopters and offering additional support**, such as practical guidance for MSMEs in the early stages of their sustainability journeys. Green loans and financing can be paired with digital solutions such as carbon accounting platforms to assess the carbon baseline of MSMEs at the point of application and help banks evaluate the associated risk. This would enable banks to tailor loan structures and terms accordingly. Feasible and reasonable KPIs tied to repayment milestones can be set, allowing MSME progress to be tracked effectively.

Figure 35: Minimum reduction in interest rate desired



Survey question: Suppose that a financing scheme is offering lower interest rates on loans for sustainability/ESG related projects. What minimum reduction in interest rates (p.a.) would be needed for your company to consider taking up such projects? | **Note:** A statistically significant variation in the desired level of support across countries or industry sectors is indicated by $p < 0.05$. Responses marked as "don't know" were excluded from the analysis. Figures have been rounded to the nearest whole number.

Financial institutions have begun to develop sustainability-linked loans and other financing solutions addressing the needs of MSMEs. For example, Malaysia-headquartered bank **CIMB** has developed products to address this demand. CIMB launched its **Sustainability-Linked Financing Programme** (SLF) for SMEs to enhance its GreenBizReady proposition. CIMB's GreenBizReady is a one-stop solution providing SMEs support in achieving sustainability targets, through training and advisory services as well as matching them with suppliers and associates. The SLF seeks to incentivise SMEs to meet their greenhouse gas emission reduction targets through financing rebates of up to 0.50% per annum as they secure financing to meet capital or expansion needs. CIMB has collaborated with the **Malaysian Green Technology and Climate Change Corporation** (MGTC), allowing SMEs to input data such as energy and fuel consumption into MGTC's online Low Carbon Operating System platform and track their progress toward sustainability performance targets agreed with CIMB. The SLF can also be combined with Bank Negara Malaysia's Low Carbon Transition Facility, allowing SMEs to benefit from better financing rates.

"Over the last year, we have had a lot of sessions with SMEs talking not only about financing and capability building, but also steps to take on their own to start their journeys in sustainability. It doesn't have to be something big, like installing large machinery to save costs and energy, but even something the smallest enterprises can start on, such as saving electricity, water, and paper. We've seen awareness grow as more SMEs become familiar with sustainability topics and understand their importance."

Jaya Balan Kathiravalu, Head, SME Banking Malaysia, Group Commercial Banking, CIMB Bank

---

In 2024, **HSBC** launched its Sustainability Improvement Loan in Hong Kong and Singapore, broadening the sustainable finance options for mid-market and smaller businesses in the region. HSBC Sustainability Improvement Loan is structured by linking the interest margin to changes in borrowers' sustainability assessments and ratings from **EcoVadis**. Borrowers of HSBC Sustainability Improvement Loan are required to complete an annual sustainability assessment throughout the duration of the facility. Those with score improvements may benefit from reduced interest rates and conversely, a score decline may increase interest rates. The first company to receive the Sustainability Improvement Loan in the region is **Opal Cosmetics**, a manufacturer and seller of personal care and beauty products headquartered in Hong Kong and with a global supply chain. The proceeds from the facility will support Opal Cosmetics' general working capital needs and ongoing research and development activities. HSBC now offers Sustainability Improvement Loans to clients in 11 markets.

"Businesses in the early stages of their sustainability journeys often find conventional Sustainability-Linked Loans beyond their reach, primarily due to limited resources for measuring and reporting their ESG performance. We are pleased to introduce the Sustainability Improvement Loan in Hong Kong, a new solution that improves businesses' access to sustainable finance."

Alice Suen, Managing Director, Head of Sustainable Finance and Investments, Hong Kong, HSBC

"We aim to provide businesses with greater access to financing linked to sustainability outcomes, encouraging a broader shift towards more sustainable practices in the region and delivering impact."

Richard Bourne, Senior Vice President, Asia-Pacific Japan, EcoVadis

DBS has also partnered with **Enterprise Singapore** to launch the ESG Ready Programme, which aims to help businesses including SMEs to build capabilities and capacity for sustainability. The programme leverages the bank's sustainability leadership and network of partners to provide companies with foundational training and advisory on the development, implementation and tracking of a sustainability strategy. In addition, DBS provides financing to defray the costs of developing and adopting sustainable business practices.[80]

"The ESG Ready Programme aims to help companies remove the guesswork on how to become sustainable by laying out a comprehensive roadmap with clear steps and relevant solutions, making it easier for them to take action. This is one way DBS goes beyond banking services, to bridge the gap and support companies in a holistic manner."

Koh Kar Siong, Group Head of Corporate and SME Banking, DBS

80 DBS (2024): DBS and Enterprise Singapore introduce ESG Ready Programme to help companies strengthen sustainability capability.

GHIM LI GROUP AND OCBC: ACCESSING SUSTAINABILITY-LINKED LOANS

Established in 1977 in Singapore as a textile business with 6 sewing machines, **Ghim Li Group** has grown to become a one-stop vertical set up, serving textile and apparel supply chains globally. Headquartered in Singapore, Ghim Li Group has international sales officers and manufacturing facilities in Cambodia, Indonesia, and Malaysia. Ghim Li Group provides original design and manufacture (ODM) and original equipment manufacturer (OEM) solutions to customers, Including major department stores, specialty stores, and mass merchant's retailers in the United States and Canada. Ghim Li Group's range of products includes ready to wear products, casual active wear, performance wear, sleepwear, menswear, and children's wear.

Ghim Li Group's sustainability initiatives began in 2016 under a pilot programme with customers in the U.S. and since then, they have diligently continued with green reporting. Many requirements have come from MNC customers in the U.S., covering climate risk reporting, supply chain traceability, and social compliance. To meet stringent supplier standards, Ghim Li Group has removed hazardous chemicals in its textile dyeing and manufacturing processes and enforced a hard requirement for its own suppliers in accordance with the Higg Index. They have a 'three strike' rule to enforce green practices among suppliers. Such initiatives allow them to retain favoured supplier status with MNC clients, especially as they provide granular data into deeper tiers of fashion supply chains.

To streamline its digital collection of ESG data, Ghim Li Group partnered with **ESGpedia**. Ghim Li Group attained a Silver badge as part of its ESBN Green Deal digital assessment. This allowed Ghim Li Group to successfully obtain an SG$16 million sustainability-linked loan from **OCBC**, with the ESBN Green Deal assessment providing a baseline to set sustainability performance targets for the loan. The loan has been put to finance Ghim Li Group's trade lines and machinery.[81]

"Compared to when we started in 2016, companies now have much better access to information, training, and courses on ESG and sustainability. We were trained by the sustainability teams of our U.S. customers but are now able to look ahead and prepare in advance for new sustainability requirements that will come into action in 2027."

Felicia Gan, Chief Executive Officer, Ghim Li Group

Image © Ghim Li Group

81 The Asian Banker (2023): Ghim Li obtains $11.7M SLL from OCBC using ESGpedia.

THE UOB SUSTAINABILITY COMPASS

UOB is dedicated to building a sustainable future by supporting industries, businesses and individuals in their sustainability efforts. UOB has tailored its sustainability initiatives to align with needs of real economy companies alongside the national priorities of countries across Southeast Asia, bearing in mind different stages of decarbonisation and sustainability progress in the region.

In 2022, UOB launched the UOB Sustainability Compass, an industry-first initiative. By providing step-by-step guides, the Sustainability Compass enables SMEs to overcome inertia and kickstart their sustainability journeys. SMEs can use the Sustainability Compass at no charge and obtain a customised sustainability roadmap with clear actionable steps in just 5 minutes. The roadmap includes an assessment of the SME's current state of sustainability maturity, along with sector-specific regulations and standards, recommendations of sustainable financing solutions, shortlist of relevant trainings, and available government support and grants.

The Sustainability Compass was developed together with PwC Singapore, and was made available to SMEs in Singapore, Malaysia and Thailand. In Singapore, where the Sustainability Compass was first launched, UOB built upon the initiative and launched the Sustainability-Linked Advisory, Grants and Enablers (SAGE) programme together with Enterprise Singapore, the government agency championing the development of SMEs. SMEs can first utilise the Sustainability Compass to identify the maturity of their sustainable practices currently, and then select from three options of pre-defined, sector-specific sustainability performance targets (e.g. reduction of GHG emissions, certification of management systems, or improvement of ESG ratings) to unlock sustainability-linked financing from UOB. Thereafter, SMEs are supported, through preferential pricing, to work with the programme's appointed sustainability service partners such as CDP, Convene ESG, M1, Paia from CBRE, PwC Singapore or TUV SUD. By pursuing pre-set targets, SMEs are able to save both on time and costs and focus their resources and attention in actual implementation of their sustainability roadmap.

"Respondents who answer the questions on the Sustainability Compass will be able to get a free downloadable road map that tells them step by step how to embark or and accelerate their sustainability journey, and this action plan is curated based on sector. Whether you are an industrial client, in consumer goods, technology, media, agriculture, and so on, the road map will be slightly different. It's also curated based on the level of maturity in a company's sustainable practice adoption."

Adrian Ow, Managing Director, Head of ESG Solutions, Group Wholesale Banking, United Overseas Bank

Apart from banks and financial institutions, innovative fintechs have also begun to develop solutions tailored to the needs of MSMEs.

FUNDING SOCIETIES: FINANCING MSMES

Industry and size agnostic, **Funding Societies** is Southeast Asia's largest unified MSME digital finance platform that provides business financing to MSMEs, as well as investment opportunities to retail and institutional investors. Funding Societies has begun to integrate ESG services into its offerings to MSME customers.

Driven by their sustainability strategy, Funding Societies has partnered with **ESGpedia** to simplify ESG reporting for MSMEs, helping them start with basic environmental metrics and gradually improve their disclosures. Funding Societies is also an early adopter of the Simplified ESG Disclosure Guide for SMEs in Supply Chains by Capital Market Malaysia. With the support of SME Corporation Malaysia, Capital Market Malaysia, and sustainability consulting firm Thoughts In Gear, Funding Societies have also shared with their Malaysian MSMEs how they can navigate the evolving sustainability landscape and its impact on business resilience and competitiveness.

Haus Indonesia is a food and beverage SME that has benefitted from Funding Societies' provision of working capital as well as ESG reporting support. Haus provides food and beverage at affordable prices and used their credit facility to open new stores and purchase several hundred e-bikes to sell products such as tea, chocolate drinks, and ice cream. Through Funding Societies' introduction to ESGpedia, Haus has obtained an ESBN Asia-Pacific Green Deal badge and spoken about their journey in sustainability at Funding Societies' events.

"To bring in a holistic view of the stakeholders in the market, we have been organising events with perspectives from international organisations, industry and private sector, ESG data and technology companies, and government representatives. We are working towards launching more green programmes and intend to continue supporting women entrepreneurs to drive inclusive and sustainable growth."

Annette Aprilana, Sustainability and ESG Lead, Funding Societies | ModalKu Group

OPPORTUNITIES IN FUNDING THE TRANSITION

OLEA

"Where ESG compliance makes a difference is if we at Olea are satisfied with a supplier's performance on some of these criteria, these help them get funding and get the funding quicker. We are getting into a space where in 5-10 years' time, a lot of SMEs will start getting funding just because they're getting more compliant according to their buyers' ESG requirements."

Hsien Min Toh, Chief Risk Officer, Olea

Incubated by Standard Chartered, **Olea** is a digital trade infrastructure platform bringing together businesses that require supply chain financing and investors investing in trade finance assets. Headquartered in Singapore, Olea aspires to become a leading global platform in empowering sustainable trade. ESG compliance has emerged as a key concern in trade finance, with larger buyers increasingly scrutinising their suppliers' ESG practices. This has begun to influence the availability of funding for MSMEs. To these ends, Olea has partnered with entities such as the Hong Kong Quality Assurance Agency to improve the understanding of ESG frameworks by SMEs. The suppliers Olea plays a role in financing are based in various sectors. One key sector in particular is solar energy. Olea has worked with E&E SMEs across Southeast Asia and South Asia to supply conductors, cables, and grid components to support and expand solar infrastructure in developed markets such as the United States, therefore advancing societal goals at the same time as economic profit.

STRIDE

"Stride aims to accelerate its deployment of clean energy solutions to more households and small businesses across Vietnam, thus reducing their energy expenses and assisting Vietnam in achieving its net zero targets."

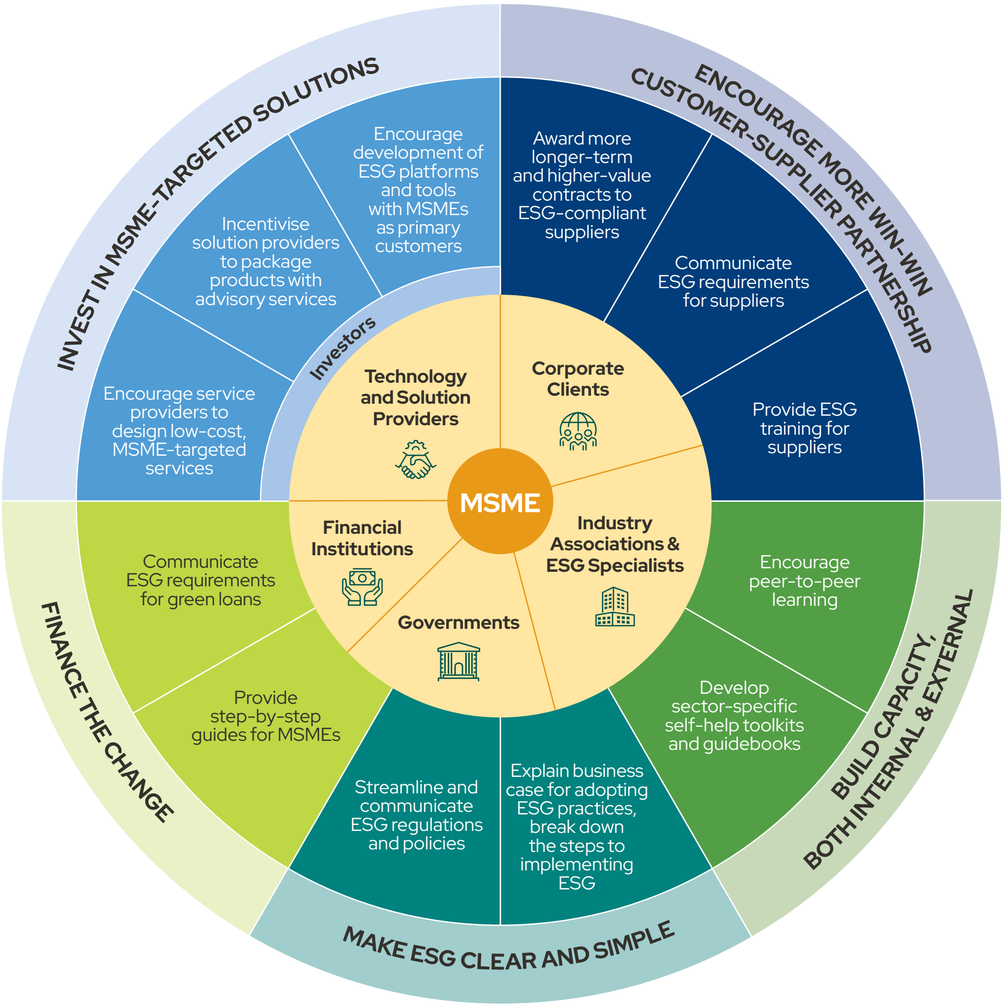
Andrew Fairthorne, Chief Executive Officer, Stride

Stride, a seed-stage company operating in Vietnam, aims to accelerate Vietnam's low carbon transition by offering low, upfront-cost financing to help households and MSMEs with eco-friendly home improvement projects, smart home technology, energy-efficient products, and access to solar energy. Stride has received increasing interest from MSME customers in Vietnam keen on lower-cost clean energy to reduce energy costs overall, through the installation of solar panels. Stride is backed by **Touchstone Partners**, an early-stage venture capital fund established to develop Vietnam's next generation of entrepreneurs.[82]

While several financial institutions have already developed and begun providing MSME-friendly financing bundled with such services, **more financial institutions should be encouraged to develop and provide such products and services**.

82 SEACEF (2023): Clime Capital, Touchstone Partners back solar cleantech platform Stride in US$2M seed round.

Figure 36: Ecosystem for supporting MSMEs in adopting ESG practices



BRINGING IT TOGETHER : IT TAKES A COMMUNITY TO SUPPORT AN MSME

Supporting MSMEs on their sustainability journey requires a collaborative effort from many stakeholders. An alignment of efforts is required to increase ESG awareness, demonstrate the business case and provide the necessary resources at the right price point. To illustrate how this ecosystem could work, we have put together a map showing how the different roles complement each other. The findings that ESG awareness and its translation into ESG practices vary more across countries than sector bear some attention. Governments can set the tone in terms of bringing about more awareness and conversations around ESG. This should take place alongside efforts by the business and financial communities to encourage investors and financial institutions to support MSMEs with more MSME-focused approaches. In this chapter, we have shared examples of how this is already taking place, and where more can be done.

Importantly, **these country-level efforts should be complemented by targeted action at the sectoral level**. **Each sector has its own unique needs, making a sector-specific approach essential**, particularly in encouraging stronger customer-supplier partnerships and facilitating more capacity-building support for MSMEs.

In the following chapters, we illustrate how this ecosystem approach could work in the four sectors we studied, and share more sector-specific examples of what is already happening. Because we anticipate that readers may choose to focus only on the chapters which pertain to their sector of interest, some charts which show cross-sector comparisons are repeated in each of the chapters.

04 Consumer Goods

ECONOMIC SIGNIFICANCE AND GROWTH PROSPECTS

The consumer goods sector is a vast category encompassing a diverse range of products, including clothing, home care, and personal hygiene products. The sector is supported by a complex, inter-connected, international web of supply chain stakeholders, including raw material suppliers, manufacturers, distributors, retailers and logistics providers. The sector illustrates the growth of Southeast Asia both as a production base and as a consumer market. In Southeast Asia, the total value of goods and services produced in the consumer goods market is projected to grow to approximately **US$969 billion** by 2029.[83]

On the consumption front, the region boasts 245 million middle-income consumers and a further 85 million upper middle-income shoppers.[84] This number is expected to rise to 415 million by 2030, creating a potential **US$4 trillion market**.[85]

Digitisation, including e-commerce, transport and food delivery platforms, and other digital services will drive this growth. Consumption accounts for around 60% of ASEAN's GDP,[86] relative to other markets such as 52% in the European Union, 53% in China, 60% in India, and 68% in the United States. This is fueled by a young, socially and environmentally conscious population. A study by BCG's Center for Customer Insights reveals that in the Philippines, Singapore, Thailand, and Vietnam, over 40% of these consumers have also expressed a clear commitment to buying socially responsible and sustainable products.[87]

For MSMEs, these shifts present a significant opportunity. Businesses that integrate **sustainability, digitalisation, and localised supply chains** will not only **capture a larger share of this expanding market** but also **future-proof their operations** against evolving regulatory and consumer expectations.

US$969 billion
expected size of Southeast Asia consumer goods market by 2029

150 million
tonnes of waste generated by Southeast Asia in 2016, with a projection of more than 300 million tonnes of waste annually by 2030

956
MSMEs surveyed from the consumer goods sector, including fashion and textiles, household goods, and packaging

78%
of consumer goods MSMEs surveyed report being moderately and very familiar with sustainability and ESG issues

83 Statista (2025): Consumer Goods - Southeast Asia.
84 BCG (2024): The Next Chapter: Decoding The Future Of FMCG In Southeast Asia.
85 World Economic Forum and Bain & Company (2020): Future of Consumption in Fast-Growth Consumer Markets: ASEAN.
86 World Economic Forum and Bain & Company (2020): Future of Consumption in Fast-Growth Consumer Markets: ASEAN.
87 BCG (2024): The Next Chapter: Decoding The Future Of FMCG In Southeast Asia.

WASTE MANAGEMENT IS THE KEY CHALLENGE FOR THE CONSUMER GOODS SECTOR IN SOUTHEAST ASIA

As the consumer goods sector expands, so does its environmental footprint, particularly in waste generation. Rising consumption and large scale production, driven by urbanisation and economic growth, is intensifying waste management challenges across Southeast Asia. The region already accounts for a fifth of global waste, generating 150 million tonnes of waste in 2016, and is projected to generate more than **300 million tonnes of waste annually by 2030.**[88] **Plastic waste alone makes up one-tenth of the region's discarded waste, with more than 80% of ocean-bound plastic originating from Southeast Asia. Alarmingly, 90% of the region's waste is either dumped or burned.**[89]

The lack of adequate waste collection infrastructure, low recycling rates, and the prevalence of single-use plastics further compound the issue, especially in rural and remote areas where high transportation costs create additional barriers. Compounding these challenges, consumer awareness of recycling remains low, and the enforcement of regulations on recycling, littering, and pollution is inconsistent.

With sustainability moving to the forefront of business priorities, addressing waste challenges will be critical for the long-term resilience of the consumer goods sector. At the same time, these challenges present significant opportunities for stakeholders to build capabilities, incentivise the adoption of more efficient business practices, and scale digital tools for MSMEs across the region.

Major consumer goods MNCs already exercise comprehensive oversight over their supply chains, making sustainability a growing expectation rather than an option. For MSMEs, adapting to these shifts is not just about compliance—it is essential to remain competitive on a global scale. **Sustainable production and waste management strategies are becoming key differentiators**, and the region's large waste output presents significant opportunities for technology providers focused on end-of-life product treatment and innovative, low-waste materials. MSMEs that embrace circular economy principles, such as reusable packaging, alternative materials, and localised waste processing, can position themselves to benefit from both growing consumer demand and emerging regulatory incentives.

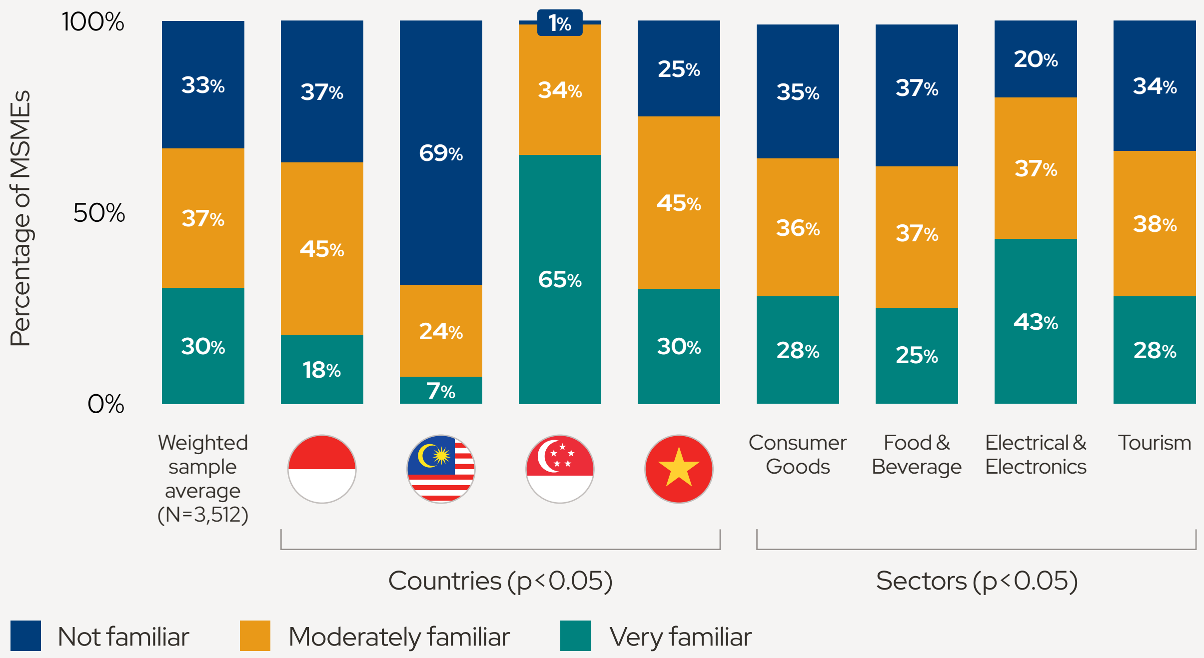
In this report, we focus on several key segments of the consumer goods sector, including fashion and textiles, household goods, and packaging. All data in this chapter refer to the consumer goods sector, for which we surveyed **956 MSMEs**.

WHAT FORMS OF SUPPORT DO CONSUMER GOODS MSMES REQUIRE?

While consumer goods MSMEs did not rank highest in ESG awareness, with 64% reporting moderate to high familiarity with sustainability issues, this still signals a meaningful level of engagement. Given the sector's exposure to climate-related risks in raw material sourcing, shifting consumer demand for sustainable products, and increasing scrutiny over waste and packaging, ESG considerations are becoming central to long-term competitiveness in this space.

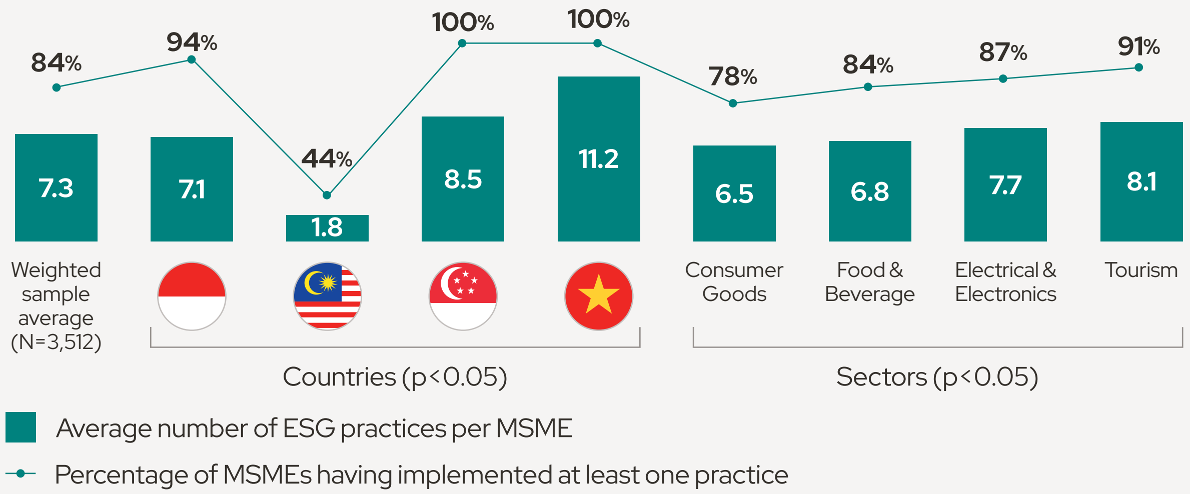
88 EcoWaste Coalition (2021): Waste Trade in Southeast Asia: Legal Justifications for Regional Action; United Nations Environment Programme (2017): Waste Management in ASEAN Countries: Summary Report.
89 Asian Development Bank (2017): Meeting Asia's infrastructure needs.

Figure 37: ESG awareness varies across different countries and industry sectors



Survey question: How familiar is the management of your company with the concept of sustainability/ESG for business?
Note: Figures have been rounded to the nearest whole number.

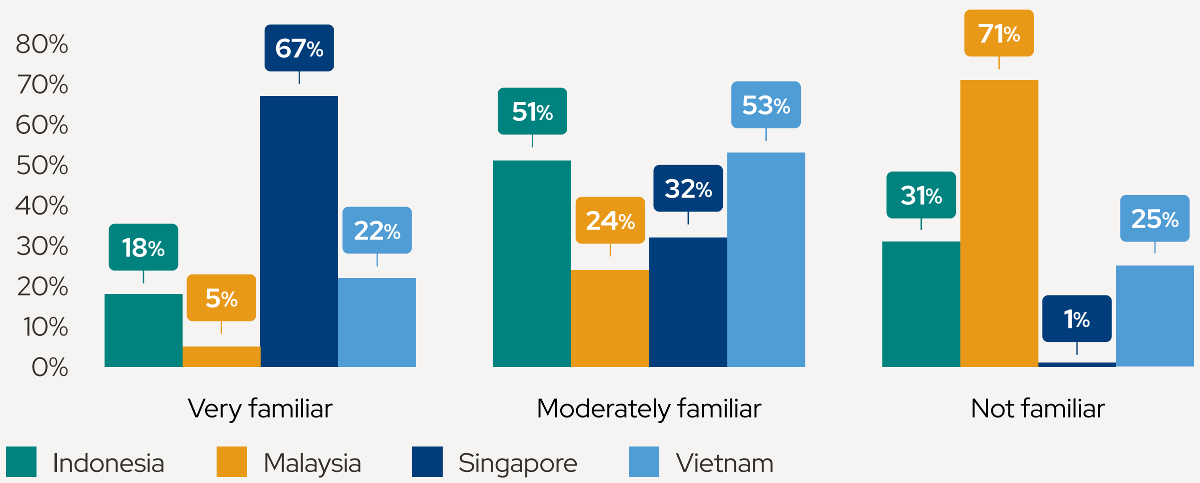
Figure 38: ESG practice adoption rate across countries and sectors – average number of practices and percentage of MSMEs implementing at least one



Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value of less than 0.05 indicates statistical significance, in which the null hypothesis is rejected. Figures have been rounded to the nearest whole number.

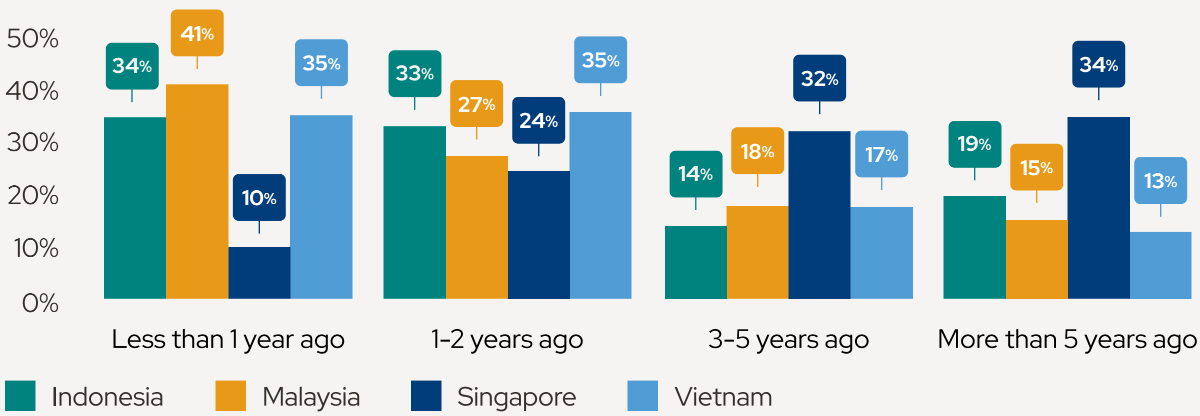
Based on our survey, when examined on a country basis, there emerge large disparities across markets in terms of awareness of ESG practices for businesses, with **larger awareness gaps present in Indonesia and Malaysia relative to Singapore and Vietnam**. **This corresponds to the recency of adoption of ESG practices among the region's MSMEs.** Singaporean MSMEs were the earliest adopters of ESG practices, while most MSMEs in Indonesia, Malaysia, and Vietnam adopted such practices only in the last 2 years.

Figure 39: ESG awareness varies across different countries



Weighted sample: n = 956 | **Survey question:** How familiar is the management of your company with the concept of sustainability/ESG for business?

Figure 40: Year of initial ESG adoption by companies

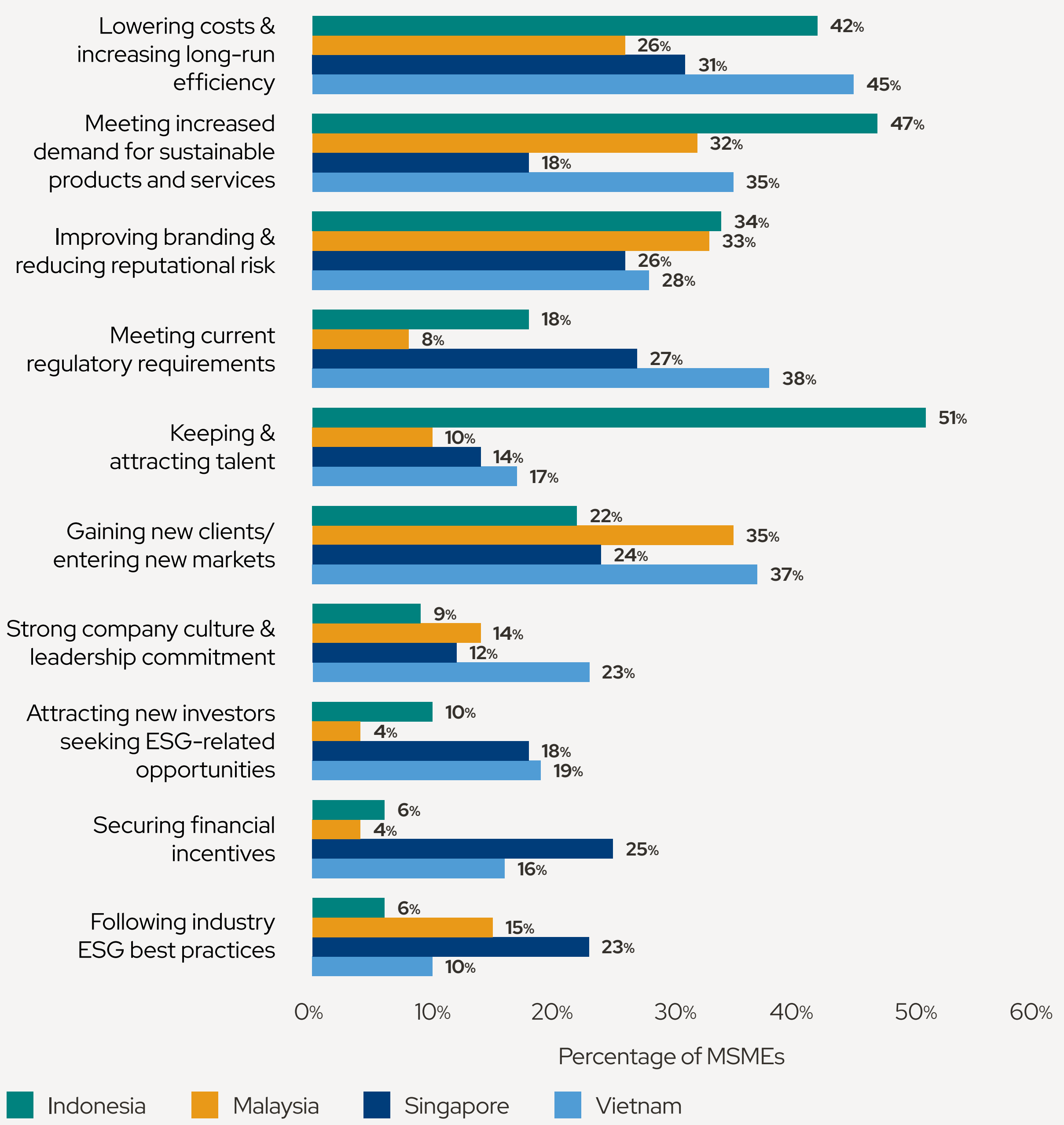


Weighted sample: n = 841 | **Survey question:** When did your company first begin adopting ESG policies or practices?

Regulatory pressures and incentives, supplier compliance obligations, and shifting consumer preferences have contributed to the quickening pace of adoption of such practices in the region over the last 2 years. As evidenced below, the **primary motivations for the adoption of ESG practices remain commercial**.

Cost-savings through increasing long-run efficiency in business operations, meeting increasing customer demands for sustainable products and services, and measures to mitigate reputational risks are the leading motivations for the adoption of ESG practices.

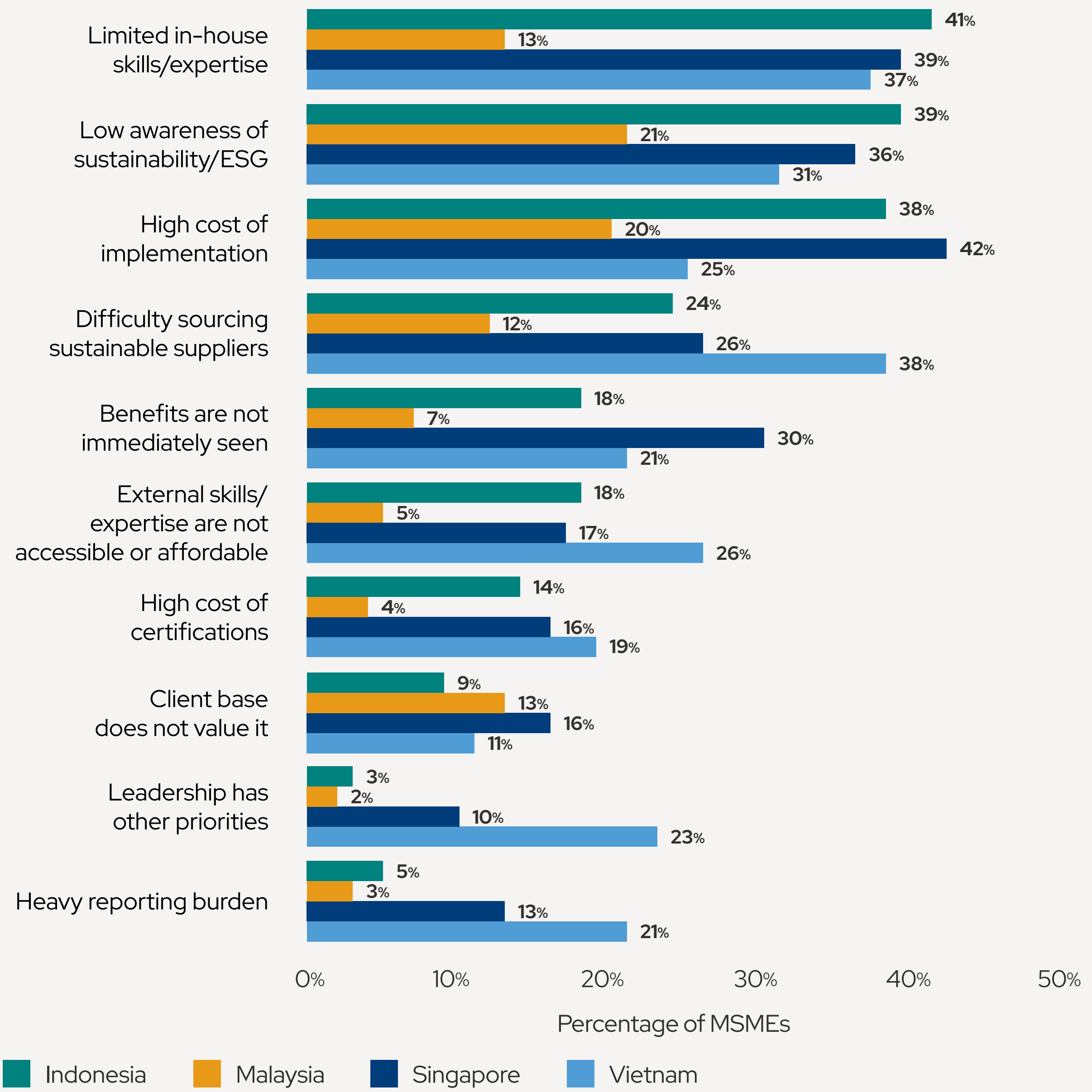
Figure 41: Key reasons for adopting sustainability/ESG practices in each country



Weighted sample: n = 839 | **Survey question:** Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options.

Key barriers to acting on these motivations in the consumer goods sector include **limited in-house skills, low awareness about ESG issues, and high implementation costs**. In particular, limited in-house skills is the top barrier in Indonesia, high implementation costs the highest for Singapore, low awareness of ESG the highest in Malaysia, and difficulty in sourcing sustainable suppliers the highest in Vietnam. These reflect different challenges and different priorities faced by consumer goods MSMEs across markets, which different ecosystem stakeholders may be well-poised to address, whether by developing more training and awareness programmes in Indonesia and Malaysia, building a larger base of sustainable suppliers in Vietnam, or providing more preferential sustainable financing in Singapore.

Figure 42: Key challenges to adopting sustainability/ESG practices in each country



Weighted sample: n = 956 | **Survey question:** What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options.

ECOSYSTEM RECOMMENDATIONS AND OPPORTUNITIES IN THE CONSUMER GOODS SECTOR

The complexity of the sector's supply chains are such that despite the far-reaching influence of major MNCs, comprehensive solutions from a broad swathe of actors will be necessary to support MSMEs in their transition. Industry associations, government agencies, financiers, and technology solution providers each play a crucial role in addressing the barriers and needs of MSMEs amidst the adoption and implementation of ESG practices. Here, we present several suggestions and opportunities broadly aligned with our overarching recommendations that will help the sector to move.

IMPORTANCE OF CUSTOMER-SUPPLIER PARTNERSHIPS

Securing commercial contracts for ESG-compliant MSMEs will be important to spur change. Commercial incentives are the top incentives identified by consumer goods MSMEs in our sample for increasing the adoption of ESG practices. especially **generating longer-term contracts guaranteeing steady business and higher prices for sustainable products or services**. The intense competition that exists across consumer goods sectors, and especially among major MNCs seeking to retain their competitive advantage amidst rapidly shifting consumer demands, makes it worthwhile for these MNCs to consider how they can address MSMEs' motivations in such a way that together, they build long term relationships which enable them to respond swiftly and effectively to changing market tastes.

Figure 43: Corporate client incentives for increasing ESG practices

Longer-term contracts guaranteeing steady business	60%	8%	43%	42%
Higher prices for sustainable products or services	31%	5%	46%	35%
Preferential payment terms such as shorter payment cycles	18%	2%	30%	31%
Guaranteed minimum purchase volumes	22%	5%	23%	28%
Bonuses or incentives for meeting sustainability targets	24%	8%	33%	11%
Grants, subsidies or awards	15%	15%	15%	11%
Specialised training and upskilling on ESG fundamentals and practices	14%	2%	9%	34%
Advisory/consultancy related to sustainability/ESG	10%	2%	9%	20%
Technology such as digital tools to enable reporting and compliance	8%	1%	9%	17%

Weighted sample: n = 956 | **Survey question:** Which types of incentives from a corporate client would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top two incentives for each country are highlighted.

MNCs in the consumer goods space are in a good position to bring about such relationships, because they have profound direct influence over their Tier-1 suppliers and are better able to maintain more substantial visibility over deeper tiers of their supply chains. MNCs are leveraging traceability platforms to extend their reach to MSMEs, enabling them to implement stricter supplier and ESG standards. MNCs we spoke to have offered incentives like guaranteed business streams for meeting supplier standards and providing capacity building through seminars and audits. Several MSMEs that are early adopters of sustainable practices were galvanised by stringent standards from MNC customers. Additionally, MNCs are offering commercial incentives to suppliers as part of their efforts to track, analyse, and reduce Scope 3 emissions, recognising the significant environmental impact embedded in their supply chains.

In Chapter 3, we shared the example of AS Watson Group's holistic partnerships with suppliers. Another prominent example of how this is done directly through a business entity is the American outdoor clothing and equipment retailer **Patagonia**. Patagonia has a significant supply chain presence in Asia, sourcing from suppliers in India, Indonesia, Japan, Sri Lanka, Taiwan, Thailand, and Vietnam. They also work with factories in Bangladesh and China.[90] Patagonia works closely with a small number of Tier-1 suppliers, including textile mills, to ensure strong relationships and adherence to social and environmental standards. Patagonia's in-house environmental team can reverse or delay the sourcing department's decision to take on a new factory, even if the quality and pricing are right.

At present, Patagonia's materials provide significant challenges in its sustainable operations, with over 90% of its environmental impact coming from materials, such as cotton, nylon, polyester, and polyurethane, and 97% from fabrics, which are finished products from woven or knitted material fibres. **They have begun moving toward using 100% renewable and recycled raw materials.** Patagonia has developed processes to use 100% recycled nylon and polyester without performance loss, while also going deeper into supply chains to work directly with cotton farmers who grow regenerative, organic certified cotton. However, the overall impact on emissions reduction of these efforts is affected by the continued presence of coal-fired mills in their supply chains in Asia. Patagonia has also been sponsoring energy and greenhouse gas emissions audits for mills to help them switch to renewable energy sources and is seeking financial assistance from other brands. **To encourage suppliers to continue investing in sustainable practices and operations, Patagonia has also begun to offer them longer-term contracts and assurances.**

"We have a tradition of paying for an audit for a business we don't control because we're so reliant on the deep supply chain. That kind of cooperation with partners is absolutely essential for us if we want to reduce our environmental footprint and improve our social footprint."

Vincent Stanley, Director of Philosophy at Patagonia

GOING BEYOND THE CORPORATES

Industry associations and government agencies will need to play a key role in increasing awareness, and coordinating ecosystem support. Given the complexity and depth of supply chains, spanning multiple tiers of suppliers, it is clear that driving ESG adoption cannot rest solely on the efforts of MNCs and corporates. Industry associations and government agencies will be crucial for helping to make ESG principles clear and accessible to MSMEs.

Within the fashion and textiles sector, the **Singapore Fashion Council** (SFC), the official association for Singapore's fashion industry, plays a pivotal role in promoting the transformation and decarbonisation of fashion and textile supply chains and support of the sectors' MSMEs. SFC's sustainability imperatives are driven by a growing awareness of the significant environmental footprint of the fashion industry, especially as one of the largest contributors to global pollution, and the economic benefits of sustainable business practices.

90 Patagonia (2025): Factories, Farms and Mills.

These include cost savings through resource efficiency, increased customer loyalty, reduced regulatory risks, and enhanced competitiveness in sustainability-conscious markets. SFC aims to help businesses, particularly MSMEs facing resource constraints, transform sustainability ambitions into actionable practices to leverage such competitive advantages.

To drive the adoption of sustainable practices across the fashion value chain, SFC has several key sustainability initiatives in place. SFC forges partnerships with companies, government agencies, consumers, communities, and organisations with the intention of catalysing transformative action and paving the way for a more sustainable and resilient fashion industry. This includes taking a systems lens to support coordinated action across stakeholders to transform the sector, as well as supporting the development of innovative material and textile solutions. For example, SFC has partnered with The Earthshot Prize, nominating companies dedicated to environmental stewardship. Xinterra, an innovative materials company, and participant in SFC's The Bridge Fashion Innovation Programme was nominated by SFC for the prize. SFC has also partnered with Royal Golden Eagle and Asia Pacific Rayon to launch a sustainable viscose apparel collection. Their annual Be The Change Summit brings together a variety of stakeholders to foster dialogue and drive actionable change in the fashion and textile industries, with sustainability a key concern. SFC is looking to carry out more initiatives with a specific focus on raising awareness and identifying adoption bottlenecks for MSMEs in the fashion and textile sectors.

"By investing in innovative technologies for fashion circularity to sustainable manufacturing, the industry can redefine its future—combining profitability with responsibility. Brands that embrace this transformation not only secure a competitive edge but also inspire trust and loyalty. From cutting-edge recycling methods to AI-driven efficiency and eco-friendly textiles, SFC strives to enable the transition in the region."

Ting-Ting Zhang, Chief Executive Officer, Singapore Fashion Council

MANY APPROACHES TO BUILDING CAPACITY

The role of the MNC, and of industry associations and government agencies, will also have to extend to another area, that of **building capacity**. Industry associations play a very important role, because they understand the unique characteristics of the industry, and can **identify tools and methodologies that are fit for purpose for MSMEs**. As we have seen, MNCs have also been willing to invest in **specialised training and upskilling** and **sustainability and ESG-related advisory and consultancy** for Tier-1 and deeper tier suppliers in their supply chains. Such initiatives not only equip MSMEs with internal expertise, but also help to subsidise external expertise to address the key challenges of **limited in-house skills and expertise, and low awareness of sustainability and ESG** faced by MSMEs in our survey pool.

Image © Tim Davis/Patagonia

For example, **Daya Selaras Group** (DSG), a sustainable industrial hub based in Java, Indonesia, has a mission to form a circular value chain in the industrial paper industry. **Daur Ulang Selaras** (DUS) is one of DSG's constituent companies that helps to recycle and circulate wastepaper throughout DSG's circular value chain and network. DUS sources from around 300 suppliers, including waste collectors or aggregators in the informal waste-sector, and businesses including waste management startups. DSG maintains a stringent supplier selection and evaluation procedure aligned with global standards. These suppliers are re-examined every 2 years and supported through training to ensure that they can meet DSG's procurement policy and standards. DSG maintains daily, ad-hoc contact with wastepaper suppliers, through which they are able to educate suppliers regarding quality and standards for wastepaper. They also carry out meetings onsite where they host waste segregation and management workshops. Supplier risk assessment is identified through their grievance mechanisms or channels such as internal audit processes. DUS has also created RE-DUS ('Respon dan Edukasi Daur Ulang Sampah', or Response and Education in Recycling), a digital application that helps suppliers manage and recycle their waste using a circular economy approach.

"We spun off our waste recycling arm in 2021 because of COVID-19. We were already working together closely with waste collectors and aggregators, so spinning off our recycling arm made sense because of the relationships and trust we have built in the industry and because recycled wastepaper is our raw material. The paper mills we work with use 100% industrial wastepaper to produce recycled paper – that's what makes us circular. Because we supply to MNCs, we began our sustainability and traceability initiatives to ensure we had relevant certifications and trained our suppliers. It just made operational and business sense."

Cynthia Handriani Wijaya, Chief Corporate Officer of Daya Selaras Group

Financial institutions have also been willing to **accompany investments with capacity building efforts**. When identifying MSMEs to finance, many financiers spell out their sustainability criteria, which can sometimes be aligned to supplier standards and codes of conduct and hence not extremely onerous to meet. Furthermore, some financial institutions have also gone beyond credit, financing audits and providing guidance on the implementation of ESG frameworks for MSMEs. We engaged with financial institutions, and even investors who provided loans directly to companies albeit with sustainability and sustainability-linked mandates. For these lenders and investors, the adoption of new technologies and operating capabilities to meet sustainability and circular economy mandates is central to the extension of debt.

Image © Daya Selaras Group

Some investors have designed solutions tailored to the specific needs of MSMEs in their portfolios. The investment management firm **Circulate Capital** stands out for its focus on building circular supply chains by investing in MSMEs engaged in recycling across South and Southeast Asia. Beyond providing growth capital to MSMEs, Circulate Capital partners with these businesses to strengthen operations, enhance sustainable practices, and accelerate scale. Founded to combat plastic pollution and climate change in high-growth markets, Circulate Capital invests in recycling infrastructure and circular economy businesses.

With commitments from companies such as The Coca-Cola Company, PepsiCo, and Unilever, Circulate Capital invests in MSMEs that collect, sort, process, and manufacture using plastic waste, diverting materials from the environment into global supply chains. These investments focus on professionalising operations, increasing collection and sorting effectiveness, creating cost efficiencies, and improving the quality of recycling feedstock. Investments into recycling operations and technologies also support the upcycling of materials, such as enabling polyester textile recyclers to produce food-grade recycled PET (rPET) for bottle-to-bottle applications, adding value and driving circularity. Circulate Capital's portfolio of MSMEs includes **Lucro Plastecycle** and **Srichakra Polyplast**.

"In addition to providing the capital for the right kind of equipment in the facility, we also provide tools, partnerships, and best practices to ensure that their supply chains are sustainable as well. As part of the investment, we'll not only do a supply chain sustainability audit that looks at the environmental practices in the supply chain, but also social practices."

Rob Kaplan, Founder and CEO, Circulate Capital

OPPORTUNITIES IN THE CIRCULAR ECONOMY

SRICHAKRA POLYPLAST

Srichakra Polyplast is an Indian upcycling company. Srichakra pioneered the deployment of recycling technology and processes to maximise the potential for recycled plastic. Based in Hyderabad, the company specialises in polyolefin and bottle-to-bottle PET recycling, producing food-grade recycled granules. Maintaining high quality standards is critical, especially for meeting the stringent requirements of large corporate customers. The certification process for food-contact grade recycled products can take up to 18 months. **Circulate Capital's** investments have enabled Srichakra to build India's first food-contact grade plastic recycling facility approved by local and European food safety authorities. The investment also supported the development of a responsible sourcing framework, strengthening the company's commitment to sustainability and traceability.

LUCRO PLASTECYCLE

Lucro Plastecycle is a leading Indian manufacturer specialising in the collection, segregation, washing, recycling, granulation, compounding, and manufacturing of products from flexible plastic waste. Lucro operates a B2B business model, supplying recycled materials to various industries including automotive, fast-moving consumer goods, and retail, with a focus on cost-effectiveness and quality. **Circulate Capital's** equity investment has supported Lucro's capital expenditure to scale its operations and expand its impact.

MANY WAYS OF CATALYSING NEW SOLUTIONS

Another way to exercise influence is through contributions to the larger ecosystem. For example, the **H&M Foundation** has made substantial contributions as a sustainability enabler for MSMEs. The H&M Foundation is a family philanthropy and operates separately from the H&M Group. The foundation charts their own strategy, and their vision is to enable a socially inclusive and planet-positive textile industry. To do so, they find and fund solutions that can help the industry at large halve its greenhouse gas emissions and continue at this pace for every decade until 2050. With a focus on inclusive circularity, waste management and improving livelihoods, H&M Foundation has established the Saamuhika Shakti initiative, meaning 'collective strength'. Over 90% of India's economy is informal, which frequently results in exclusion from the formal financial system, financial precarity, and derision from the public at large. Rather than being neglected, workers in the informal economy must also be included in the creation of new solutions and green business models. Saamuhika Shakti is structured for collaboration and collective impact, addressing root causes of the challenges faced by waste pickers rather than their symptoms. The initiative's primary role was to act as a catalyst and convene the necessary stakeholders to address holistic, complex systems change, particularly in textile waste. Recognising that many donors were unwilling to fund such initiatives, H&M Foundation has provided patient philanthropic funding to lay the groundwork for future market-based solutions.

Lastly, **investing in new technology and materials will be vital to meet the needs of the sector's MSMEs**. The breadth of the consumer goods sector, coupled with growing consumer demand globally and regionally and the increasing urgency of sustainability imperatives, has yielded conditions ripe for innovative solutions. Across supply chains, a dearth of sustainable packaging and materials has emerged as a key concern for companies of all sizes, ranging from MSMEs to MNCs. Based on our survey responses, **26% of MSMEs identified difficulty sourcing sustainable suppliers** as a key barrier.

Startups are providing disruptive technologies in new materials, recycling, and consumption habits that have potential applicability across supply chains, or even through the disintermediation of supply chains altogether. The innovative materials provided by these solution providers can help address barriers toward sustainable sourcing **by providing sustainable materials to MSMEs**. Investors play a key role in supporting innovative solutions and bringing together stakeholders that will allow meaningful change to take place, whether in the textile and apparel, household goods, or packaging sectors, or elsewhere. Key enablers and solution providers in our sample have a focus on **sustainable materials and fashion**.

Image © H&M Foundation

Image © Polymateria

POLYMATERIA AND ABC IMPACT: BRINGING NEW TECHNOLOGIES TO MARKET

Polymateria has pioneered a biotransformation technology which enables the safe biodegradation of polyolefins in the open terrestrial environment, converting the plastic into water, carbon dioxide, and biomass without leaving any microplastic or toxic residue in the open environment. The solution serves various industries reliant on shorter-life plastic applications including food packaging, adhesives, hygiene items, and agriculture. Backed by the Singapore-based impact investor **ABC Impact**, Polymateria is seeking to accelerate the commercialisation of its biotransformation technology on a global scale and expand into new markets in Asia where fugitive plastic pollution is most acute. The technology can be deployed seamlessly within existing manufacturing processes, integrates smoothly with current recycling systems and can be used with conventional or biobased polyolefins. It offers unparalleled scalability and potential for widespread environmental impact.

"With the strength of Polymateria's scientific underpinning and the vast scalability of its technology, we believe that the solution developed by the company can help address challenges in plastic packaging related pollution. We look forward to helping the team expand its commercialisation reach and further generate impact at scale in Asia."

Sugandhi Matta, Chief Impact Officer, ABC Impact

"Polymateria shows how innovation is critical for tackling the world's most pressing environmental challenges. When analysing global plastic pollution data, we saw that 32% of plastic packaging leaks into the environment each year. With 80% of plastic in our oceans coming from this plastic leaked onto the land, it's clear we can have most impact by stopping plastic on land before it reaches the oceans. Designed to achieve true scale quickly, this is exactly what our technology does."

Richard Horne, CEO, Polymateria

TERRACLE AND ENVISIONING PARTNERS: ENABLING RECYCLING AT SCALE

The Korean startup **Terracle** specialises in the chemical recycling of diverse plastic waste types, including mixed plastics and textile waste, to produce renewable monomers like terephthalic acid (TPA) and ethylene glycol (EG). In doing so, they can overcome the limitations of conventional physical recycling, which often requires the collecting, cleaning, and crushing of waste polyethylene terephthalate (PET) into flakes. Backed by Seoul-based impact investor **Envisioning Partners**, Terracle's technology, based on depolymerisation via hydrolysis, allows them to produce high-grade recycled plastic materials through a continuous production process. This yields significant energy savings compared to conventional methods.

Terracle provides recycled materials and environmental solutions to various industries, establishing closed loops for product categories and reducing waste disposal costs and greenhouse gas emissions. These materials can be easily integrated into existing business operations, preventing the need for facility upgrades. Terracle's production of TPA helps to contribute to diverse applications, including in packaging, textiles, engineering plastics, automotives, electronics, and more. With the support of Envisioning Partners, Terracle plans to expand its recycling capabilities and ambitions, including plans to recycle more plastic types like polyurethane in the near future.

"The success of our technology hinges on both its economic viability and environmental impact. As the scale increases, the types of waste become more diverse and harder to control, and the costs for each experiment also rise. With each increase in production scale, previously unseen issues and the need for new technologies emerged. We realised that plastic decomposition technology alone is not sufficient for commercialisation, and many advanced technologies have not been scaled up successfully. We believe that addressing these challenges presents a significant opportunity."

Kibaek Kwon, Founder and CEO, Terracle

"We aim to rectify the misguided assumptions of capital markets that artificially divide society from the economy and market. Society is the focal point of impact, and impact creators—such as founders and companies committed to making a difference—generate change through these markets. In reality, there is no clear separation between social and economic activities, nor between society and markets. A business that fosters positive impact is inherently a force for good in both realms."

Yong Hyun Kim, Managing Partner, Envisioning Partners

OPPORTUNITIES IN SUSTAINABLE MATERIALS AND TEXTILES FOR START-UPS

BUYO BIOPLASTICS

Vietnam-based solution provider **BUYO Bioplastics** stands out for its advanced in-house technology, converting biowaste from the food and beverage industry into eco-friendly and highly functional bioplastic products. Their products are 100% nature-based and biodegradable and used for packaging, serving the consumer good and food and beverage industries. These include flexible packaging, rigid packaging, and medical application products, serving customers across North America, Europe, and Asia. Their customer base is divided into large MNCs and smaller MSMEs. BUYO's MNC customers are motivated by the need for biodegradable and carbon-reducing materials that perform like plastic, addressing environmental concerns and regulatory requirements. BUYO's MSME customers are more sensitive to price, requiring that BUYO's products have mass application to drive down costs. BUYO's solution helps address the challenge of sourcing from sustainable suppliers identified as a key issue by consumer goods MSMEs in our survey.

"Customers are looking for materials that can be biodegradable, contribute to the circular economy, and that can help them cut their carbon emissions, which requires a high ratio of bio-based content. This is what we are offering: a solution that perform like plastic while addressing these two constraints."

Hanh Do, Co-Founder and CEO, BUYO Bioplastics

CIRC

U.S.-based textile startup **Circ** has created a technology system that returns clothes to the raw materials from which they were made. With a goal of recycling 10 billion garments by 2030, representing 10% of the global apparel market and saving more than 100 million trees, Circ has continued to refine its textile recycling process, particularly polyester-cotton blends. Given the prominence of the textile industry in Asia, Circ has set its sight on partnerships and expansion in the region. Its participation in the Amplifier, a mentorship programme for high impact startups established by the Centre for Impact Investing and Practices and the Philanthropy Asia Alliance, has helped to enable this. Circ has also been backed by Patagonia, which not only provides financing but also sources fabric from Circ through its take-back policy, where consumers can recycle clothes in-store. Other strategic partners include online fashion retailer Zalando, Taiwanese polyester and textile manufacturer Far Eastern, Korean manufacturer Youngone, and U.S. textile manufacturer Milliken.

"We sit at the very beginning of the supply chain, so we're replacing natural resources with the same resource except coming from end of life or end of use, textiles."

Peter Majeranowski, President, Circ

A major challenge for all these start-ups is their ability to scale. This will require continued support from investors including impact investors, as well as financial institutions.

CONCLUSION

Among the sectors we studied, the consumer goods sector stands out in terms of the relatively higher number of examples we could find, to illustrate the important actions which need to be taken. As highlighted earlier, it is also the sector with the highest level of ESG awareness among MSMEs, and the largest number of ESG practices put in place.

Still, there remains **significant potential for consumer goods MSMEs to embrace ESG practices and transition toward more sustainable operations**. As Southeast Asia's middle class drives demand for consumer goods in fashion, home care, and beauty, MNCs, investors, and financial institutions have already started supporting sustainable production and waste management solutions. More is still needed to keep pace with regional and international demand. Consumer goods MSMEs face intense competition and regulatory pressures, making it crucial for them to innovate and adopt sustainable practices to remain competitive. Emerging solutions are already addressing the sector's sustainability challenges, offering opportunities for further growth.

05

Food and Beverage

ECONOMIC SIGNIFICANCE AND GROWTH PROSPECTS

The food and beverage (F&B) sector holds a significant position in Southeast Asia, reflecting the region's role as both a production hub and a consumer market. **Southeast Asia is a major contributor of the world's food supply**, accounting for 30% of the world's rice harvest.[91] As of 2023, the F&B industry in Southeast Asia was valued at US$667 billion.[92] The revenue in the food market is expected to grow 6.99% annually to reach US$900 billion by 2028.[93]

On the consumption side, **demand for food in Southeast Asia is expected to increase by 40% by 2050**,[94] driven by a growing, more affluent population with changing eating habits, further intensifying demand for agricultural products.[95] It is estimated that over the next decade, economies in Southeast Asia will require approximately US$800 billion of investment to meet consumer demand.[96]

MSMEs are integral to the growth of Asia's F&B sector, playing pivotal roles as food processors, manufacturers, and suppliers within these dynamic supply chains. **Smallholder farmers, positioned at the furthest downstream points, often interact with intermediary MSMEs that serve larger customers.** Strengthening MSME participation can help local economies become more resilient to disruptions while fostering innovation and sustainability.

40%
increase expected in demand for food in Southeast Asia by 2050

25%
of global emissions are contributed by the F&B sector

1,043
MSMEs surveyed from the F&B sector, including food processors, manufacturers, and suppliers

59%
of F&B MSMEs surveyed report being moderately and very familiar with sustainability and ESG issues

91 International Rice Research Institute (2025): Transitioning toward equitable, profitable, and environmentally sound rice agri-food systems.
92 Source of Asia (2024): F&B Industry in Southeast Asia 2024-2025.
93 Source of Asia (2024): F&B Industry in Southeast Asia 2024-2025.
94 McKinsey (2023): Saving Southeast Asia's crops: Four key steps toward food security.
95 PwC, Rabobank, Temasek (2021): The Asia Food Challenge: Understanding the New Asian Consumer.
96 Roland Berger (2023): Agriculture in Southeast Asia: investment opportunities.

FRAGMENTATION, CLIMATE VOLATILITY, AND LOW INCOMES ARE KEY CHALLENGES FOR FARMERS IN SOUTHEAST ASIA'S FOOD AND BEVERAGE SECTOR

The region's F&B sector relies heavily on smallholder farmers, which are highly fragmented and typically small in size. There is an estimated 100 million farms in Southeast Asia, averaging just two hectares each, forming the backbone of the region's agricultural landscape.[97] However, farmer populations continue to shrink as ageing farmers retire and the younger generation shows little interest in farming.[98] Rapid urbanisation over the last 30 years has led to rising labour costs for smallholders as young people increasingly leave urban areas, while **agricultural costs have also risen more rapidly than the selling price of farm yields**. For example, costs of inputs like fertiliser and crop protection chemicals have risen by 80-250% over the past few years, while yield prices have stagnated.[99]

The F&B sector is also highly vulnerable to climate change, with weather volatility and natural disasters directly impacting crop yields and smallholder incomes.[100] Poor or declining harvests can reduce both the quality and quantity of processed foods and beverages, affecting MSME intermediaries. The sector also contributes significantly to greenhouse gas emissions, **accounting for about 25% of global emissions**.[101]

Climate change exacerbates the challenges smallholder farmers face accessing traditional financing due to crop failures and erratic weather patterns. Inaccurate credit risk assessments and the inability of farmers to guarantee repayment remain persistent challenges. For financial institutions, the high cost of customer acquisition often outweighs projected returns, limiting access to financing for farmers. This creates ripple effects across the food and beverage value chain, constraining MSMEs reliant on consistent raw material supplies.

Despite the complexities, there are significant opportunities to create a more sustainable and stable agri-food system. MSMEs must meet the region's rising demand for sustainable consumption, while MNCs seek to strengthen their supply chains with sustainable agricultural practices. Solutions for MSMEs and smallholder farmers must be customised to local needs and ground realities.[102] For long-term scalability, market mechanisms will be essential to ensure these solutions are affordable and viable for Southeast Asia's unique agricultural landscape.

In this report, we focus on several key segments of the F&B sector, including food processors, manufacturers, and suppliers. All data in this chapter refer to the F&B sector, for which we surveyed **1,043 MSMEs**.

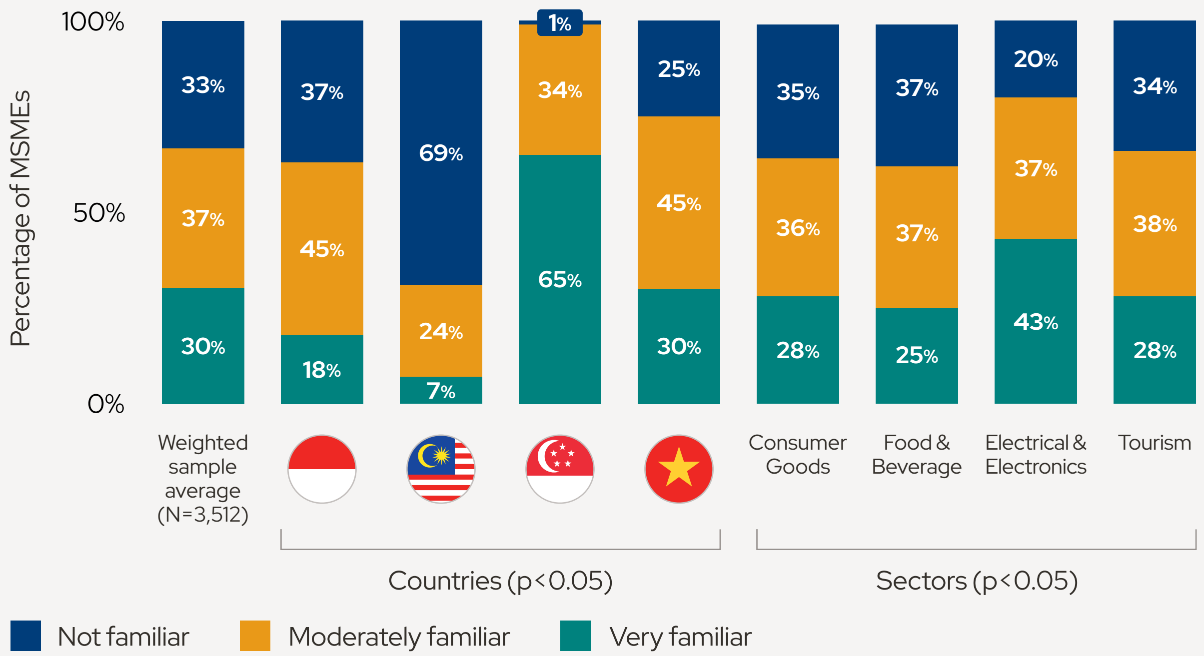
WHAT FORMS OF SUPPORT DO F&B MSMES REQUIRE?

F&B MSMEs are integrated not just into F&B supply chains, but often have overlaps in procurement with consumer goods MSMEs and share end-customers with tourism MSMEs. Despite the vulnerability of the F&B sector to extreme weather shocks, **only 62% of F&B MSMEs surveyed indicated familiarity with sustainability and ESG**. While this suggests a disconnect between increasing preferences for sustainable consumption and actual ESG practices by F&B MSMEs, as well as increasing ESG implementation pressures from MNC customers, this also reveals a key opportunity in the market to address knowledge gaps. This could also suggest that the dynamism visible in the consumer goods sector in terms of ESG engagement and adoption is not mirrored in the F&B sector, reflecting less exposure to international supply chains or greater day-to-day operating pressures.

Despite efforts by MNCs, governments, and other stakeholders, **F&B MSMEs have adopted and implemented a relatively low number of ESG practices** among all four sectors in our study at 6.8. Only 84% of F&B MSMEs are likely to have adopted at least one ESG practice.

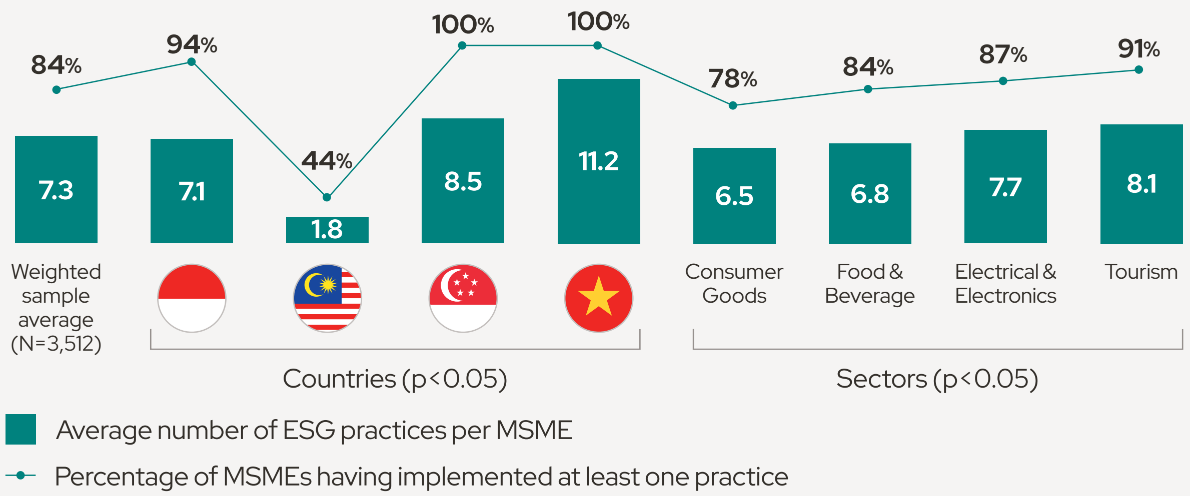
97 World Wildlife Fund (2021): Unlocking Smallholder Finance for Sustainable Agriculture in Southeast Asia.
98 Centre for Impact Investing and Practices (2024): Seeding the Future: Transforming Smallholder Farms for a Sustainable Tomorrow.
99 McKinsey (2023): Trends driving automation on the farm.
100 PwC, Rabobank, Temasek, Terrascope (2023): The Asia Food Challenge – Decarbonising the Agri-Food Value Chain in Asia.
101 World Economic Forum and Boston Consulting Group (2021): Net-Zero Challenge: The supply chain opportunity.
102 Centre for Impact Investing and Practices (2024): Seeding the Future: Transforming Smallholder Farms for a Sustainable Tomorrow.

Figure 44: ESG awareness varies across different countries and industry sectors



Survey question: How familiar is the management of your company with the concept of sustainability/ESG for business?
Note: Figures have been rounded to the nearest whole number.

Figure 45: ESG practice adoption rate across countries and sectors – average number of practices and percentage of MSMEs implementing at least one

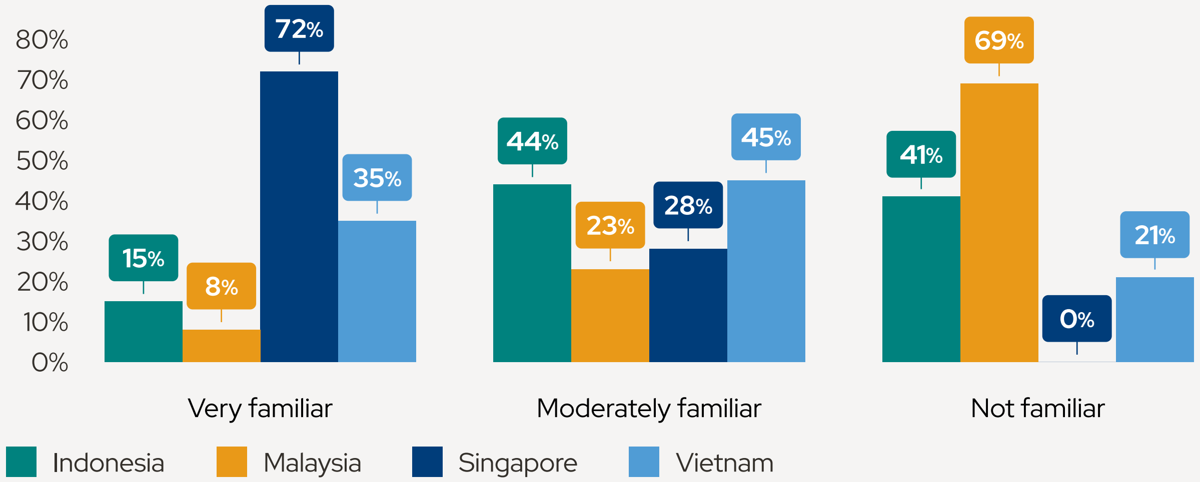


Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value of less than 0.05 indicates statistical significance, in which the null hypothesis is rejected. Figures have been rounded to the nearest whole number.

On a country basis, the disparity among F&B MSMEs who are **moderately familiar** with sustainability and ESG issues is narrower, with between **27% to 45% of MSMEs in the region** indicating moderate familiarity. Greater differences emerge among MSMEs being unfamiliar with ESG practices.

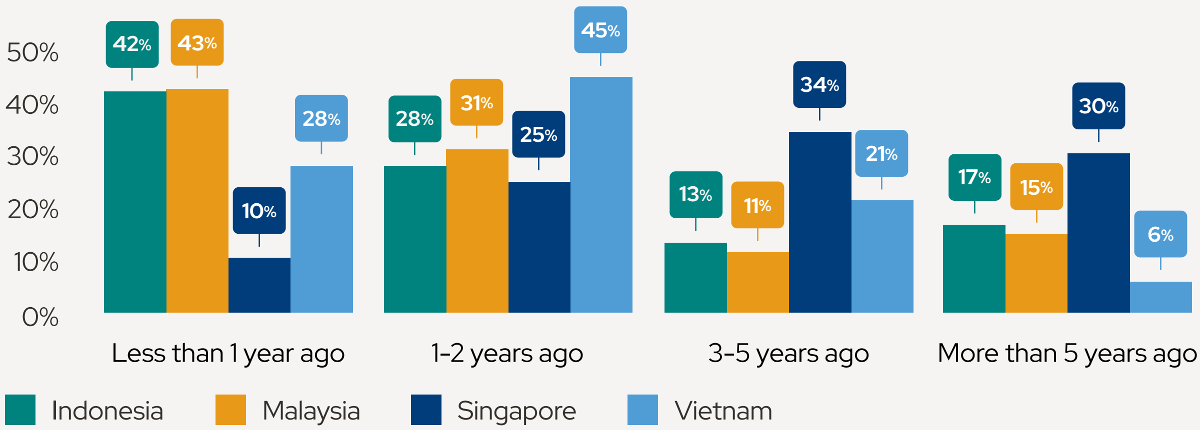
There remain opportunities to boost levels of ESG awareness across the markets in the region. Singaporean F&B MSMEs are more likely to have adopted ESG practices for the longest duration, with most in Indonesia, Malaysia, and Vietnam having adopted such practices in the last 2 years.

Figure 46: ESG awareness varies across different countries



Weighted sample: n = 1,043 | **Survey question:** How familiar is the management of your company with the concept of sustainability/ESG for business?

Figure 47: Year of initial ESG adoption by companies

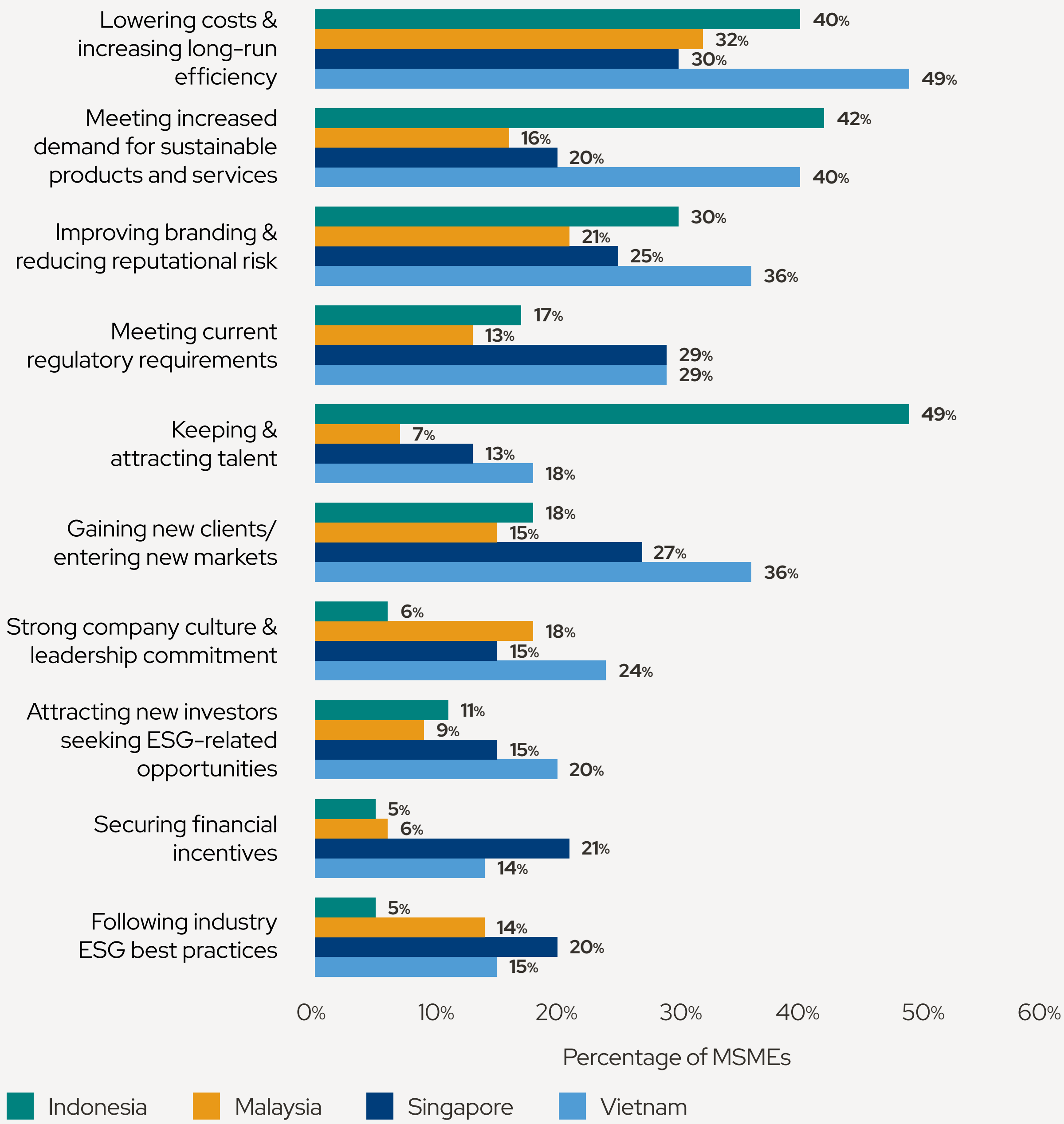


Weighted sample: n = 910 | **Survey question:** When did your company first begin adopting ESG policies or practices?

Increasing regulatory pressures, improving consumer awareness toward ESG issues, and shifting consumption habits are helping to drive this increase in ESG adoption.

The top motivations for ESG adoption by F&B MSMEs are **market-driven**, with the main drivers being **lowering costs and increasing long-run efficiency, meeting increased demand for sustainable products and services, and improving branding and reducing reputational risks.**

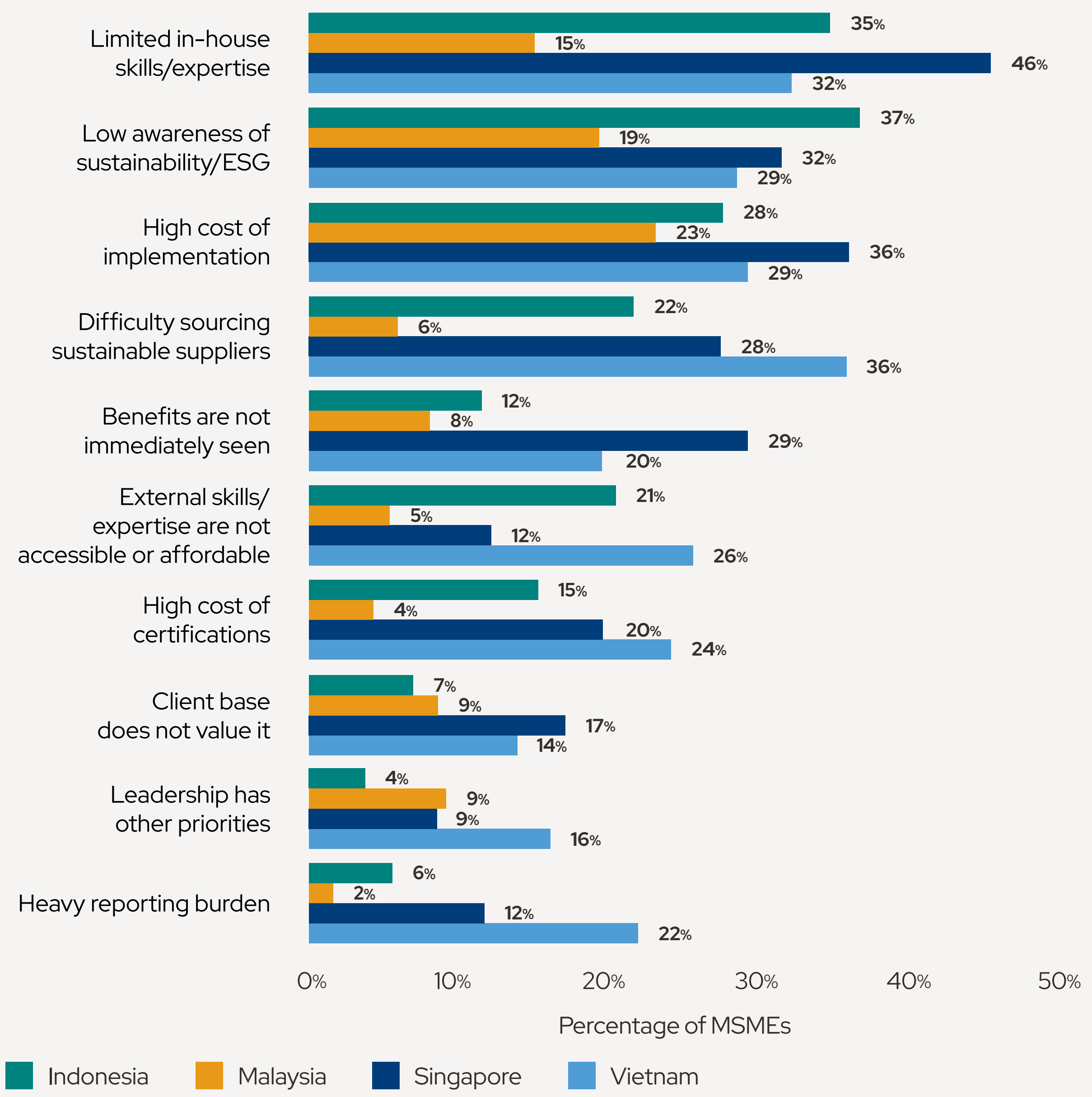
Figure 48: Key reasons for adopting sustainability/ESG practices in each country



Weighted sample: n = 908 | **Survey question:** Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options.

The barriers to adopting ESG practices show variations in top barriers on a country-basis relative to the other sectors, even if the top barriers remain the same. For F&B MSMEs, **low awareness of ESG issues is the top barrier in Indonesia, high implementation costs in Malaysia and Singapore, and difficulty sourcing sustainable suppliers in Vietnam**. There remain opportunities for F&B MSMEs in Indonesia to receive further training, costs to be brought down for MSMEs in Malaysia and Singapore, and opportunities to develop a pool of sustainable suppliers in Vietnam.

Figure 49: Key challenges to adopting sustainability/ESG practices in each country



Weighted sample: n = 1,043 | **Survey question:** What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options.

ECOSYSTEM RECOMMENDATIONS AND OPPORTUNITIES IN THE F&B SECTOR

In contrast to other sectors, full visibility of the entire supply chain, as well as direct engagement with smallholder farmers downstream, take on greater significance in the supply chain strategies of F&B MNCs. Due to the fragmentation of smallholder farmers and MSME intermediaries across the F&B sector, MNCs play a key role coordinating across ecosystems of the respective commodities that they source, especially if they are primary offtakers. **This necessity of reaching directly to smallholder farmers to ensure stable and resilient supply differentiates the sector from others in our study.** The heightened focus on direct engagement may stem from the more immediate and visible impacts of climate change on yields and supply stability in the F&B sector.

We present several key recommendations for MNCs, as well as investors, financial institutions, and solution providers, in supporting F&B MSMEs and smallholder farmers that are aligned with our recommendations in Chapter 3. Firstly, **ecosystem players will need to understand and engage their supply chains from the ground up**, starting from the producers themselves, **smallholder farmers**. To help improve livelihoods and encourage the adoption of sustainable and regenerative farming practices, a comprehensive awareness of the challenges smallholder farmers face is necessary. Secondly, building from this awareness, ecosystem players will need to **invest in capability development and solutions that are easy for farmers and MSMEs to understand and implement**. Such initiatives can take various forms. Thirdly, **stakeholders will need to help farmers and MSMEs secure financing**, especially given the rising cost of inputs.

Responses from our survey suggest that F&B MSMEs have the highest preference for four types of support from MNCs. These include **longer-term contracts guaranteeing steady business, higher prices for sustainable products or services, preferential payment terms such as shorter payment cycles, and guaranteed minimum purchase volumes**. The preference for longer-term contracts is higher relative to MSMEs across our sample on average and reflect the volatility characteristic of the food and beverage industry.

Figure 50: Corporate client incentives for increasing ESG practices

Longer-term contracts guaranteeing steady business	56%	14%	35%	46%
Higher prices for sustainable products or services	32%	9%	34%	37%
Preferential payment terms such as shorter payment cycles	20%	5%	33%	28%
Guaranteed minimum purchase volumes	15%	10%	24%	35%
Bonuses or incentives for meeting sustainability targets	16%	4%	23%	19%
Grants, subsidies or awards	13%	14%	17%	14%
Specialised training and upskilling on ESG fundamentals and practices	16%	4%	11%	29%
Advisory/consultancy related to sustainability/ESG	6%	2%	10%	22%
Technology such as digital tools to enable reporting and compliance	10%	2%	12%	16%

Weighted sample: n = 1,043 | **Survey question:** Which types of incentives from a corporate client would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top two incentives for each country are highlighted.

Many of the **MNCs we have spoken to have all stepped up to do what they can, because it makes business sense**. These MNCs regard training and capacity building as important to maintaining the resilience of their supply chains, both by ensuring better consistency of yields but also better health in the farms they source from. They begin from comprehensive engagements with smallholder farmers and MSMEs and invest to provide implementable solutions and access to financing. **Mars** in particular covers all three recommendations for the cocoa smallholder farmers and processors in its supply chain. **PepsiCo** also maintains a similarly comprehensive approach to engaging smallholder farmers and MSMEs across agriculture, packaging, and water. **Thai Wah** has also implemented these recommendations, albeit at a regional level with smallholder farmers and MSMEs. For **Olam Agri**, its focus remains on engaging smallholder farmers and is less consumer-facing, while **Vitasoy** concentrates its efforts on supplier engagement for its MSME products. **These MNCs have taken a thorough look at all stakeholders in their supply chains.**

Image © Mars

MARS: EMPOWERING SMALLHOLDER FARMERS IN COCOA SUPPLY CHAINS THROUGH ECOSYSTEM APPROACHES

An iconic company with a portfolio of snacking, food, and pet care and veterinary services brands and products, Mars is a global family-owned business with the ability to think generationally and with a profound presence across the world, Mars is guided by its Five Principles of Quality, Responsibility, Mutuality, Efficiency and Freedom.

With a commitment to its Sustainable in a Generation Plan, launched in 2017, this approach is reflected in the intentionality with which Mars collaborates with stakeholders across its supply chains, including smallholder farmers who grow cocoa that may be used in the production of its famed chocolate products. Mars has had a longstanding presence in Asia, including Indonesia and The Philippines, where it has pursued key initiatives across its cocoa supply chain to help improve the livelihoods of smallholder farmers and to encourage their adoption of more sustainable agricultural practices.

At present, Indonesia contributes a modest **6.35% of global cocoa production, with an estimated 4.38 million tons produced in 2024**.[103] However, smallholder cocoa farmers in Indonesia have faced declining yields causing Indonesia cocoa production to decreased by 68% over the last decade, due to weather shocks from climate change, old trees, degradation of soil leading to soil acidity as well as increased pest attacks. **Given that Indonesia is the largest producer of cocoa beans in Asia, a decline in cocoa production also corresponds to a declining majority share in the region.**

Indonesia also has one of the highest capacities for cocoa grinding in Asia. Cocoa grinding is a crucial part of the chocolate making process, helping to release the flavour of the beans, create the texture of chocolate, and extract cocoa butter. In 2022-23, Indonesia processed 465,000 tonnes of cocoa beans, though it only produces 180,000 tonnes. The remainder of the beans currently ground in Indonesia is imported.

103 Indonesia Investments (2025): Cocoa.

Mars aims at helping create waves of change rather than working through one-off efforts. They do so through encouraging the adoption of new agricultural practices, training and other technology and other interventions as part of ecosystem. Some of Mars' goals include:

- Reducing GHG emissions from their full value chain by 27% by 2025 and achieving net zero GHG emissions across their full value chain by 2050, in each case measured against the 2015 baseline for their full value chain.
- Ensuring that 100% of the cocoa produced and sourced from farms participating in the Mars Responsibly Sourced Cocoa Program in 2025 is deforestation- and conversion-free (as defined by the Accountability Framework Initiative).
- Contribute to support the turnaround of Indonesia cocoa production towards positive trajectory and help improve cocoa farming operations.
- Helping farmers improve their income by adopting agroforestry models which allow them to grow more cocoa and other crops on their existing land.

Mars' vision is to help create a more modern, inclusive, and sustainable cocoa ecosystem where everyone is empowered to thrive. Through its Cocoa for Generations strategy and by working with its partners on the ground, Mars committed a billion dollars over a period of 10 years (since 2018) to help make a meaningful, sustainable, and systemic difference for cocoa farmers, their families and communities. Mars advances its theory of change across three dimensions: social, environmental, and economic. Mars' social initiatives focus on empowering and advancing women empowerment, access to education, child protection, and encouraging young people enter the agriculture industry. Their environmental initiatives are focused on sustainable landscape management partnerships, traceable cocoa sourcing without deforestation, and training and coaching for smallholder farmers. Their economic initiatives are focused on increasing farmer incomes, helping farmers diversify their farming through agroforestry, and improved access to inputs and markets.

One of Mars' key initiatives in Sulawesi, Indonesia is the Mars Cocoa Academy, which trains 'cocoa doctors', who are cocoa agripreneurs, that study modern farming techniques aimed at helping farmers to dramatically increase their cocoa production. These cocoa agripreneurs operate their own cocoa businesses and provide advice and coaching to farmers in their own villages, in effect cultivating new MSMEs. After a selection process, an agripreneur attends a 4-week cocoa agronomy training at the Cocoa Academy. After setting up their nursery and farm services, they then qualify to return for a 3-week agribusiness training at the Cocoa Academy. Mars' agronomy training includes training around best practices and accurate tools to develop, implement, and improve farming processes, access to and knowledge of good planting materials and high-quality seedlings. Academy participants are also given business training on cash flow management and decision making, as well as idea filtration, marketing, production management, and finance.

By encouraging the adoption of agroforestry, Mars aims to help contribute to improved soil fertility, increased crop yields, and carbon sequestration while promoting environmental conservation. By promoting cocoa agroforestry among smallholders in Indonesia and the Philippines, Mars can help contribute to restoring forest, which helps to improve biodiversity and resilience of local ecosystems and contribute to climate change mitigation. Equipped with sustainable and efficient farming knowledge, a single cocoa agripreneur can provide support to 100 to 200 smallholder cocoa farmers, promoting regenerative practices and strengthening the resilience of local cocoa supply chains.

The Advancing Cocoa Agroforestry Towards Income, Value and Environmental Sustainability (ACTIVE) program, a public-private partnership with Mars is also focused on improving farmer livelihoods. Under the agroforestry model, beyond environmental benefits, farmers also benefit from an increased and diversified income. Cocoa needs a minimum of 2 years to grow and be ready for harvest, during which other fruits and crops can provide income. This prevents farmers from leaving their farms in pursuit of side income. Cocoa trees usually have a lifecycle of around 20 to 25 years, after which their productivity may decline. The ACTIVE program has encouraged farmers to supplement their incomes by growing timber crops, which are ready for harvest after this period of 25 to 30 years. These helps provide diversified income streams for farmers, providing additional pathways to financial resilience.

To help scale up cocoa production and agroforestry in Sulawesi alone across 867,000 hectares of farmland, it will require 3,000 full-time agripreneurs and grafters.

Mars is currently reviewing how the programs they have established in Sulawesi can go wider and further from where they are currently active to become a national program at scale in Indonesia.

To do so, Mars is working with suppliers like Olam Food Ingredients (ofi) and local conservation NGOs like Forum Konservasi Leuser to identify agripreneurs and expand activities nationwide to cover areas with cocoa farmers. In doing so, these companies will be able to leverage their operations to deliver impact at scale.

Given that Mars sources and uses cocoa ingredients provided by suppliers and the suppliers are the ones who purchase and process the cocoa beans produced by farmers, Mars cannot directly address the needs of cocoa farmers. Mars is working with its cocoa ingredient suppliers, local governments, non-governmental organisations and other stakeholders, however, to help address the needs of cocoa farmers through the agripreneur business model. They are also increasing efforts to work with Cocoa Sustainability Partnership and the Indonesian government to help continuing to cultivate a supportive, business enabling environment for agripreneurs.

Image © Mars

PEPSICO: TRANSFORMING SUPPLY CHAINS FROM END-TO-END

PepsiCo's vision is to be the global leader in beverages and convenient foods by winning with PepsiCo Positive (pep+) always and everywhere. pep+ is their strategic end-to-end transformation that puts sustainability and human capital at the center of how their company will create value and growth by operating within planetary boundaries and inspiring positive change for planet and people. This extends across their Asia Pacific operations, which touches partners from China to Australia, New Zealand, South Korea, the Philippines , Singapore, Thailand, and Vietnam, among other markets.pep+ is PepsiCo's strategy to nurture the soil, air, and water that sustain all people, positioning PepsiCo for future success and seeking to positively impact the communities they touch around the world, today and for future generations. Sustainability is treated as an integral part of PepsiCo's business model, embedded in company decisions from capital investment to annual operational plans.

PepsiCo's sustainability strategy is supported by three pillars:

- **Positive Agriculture:** Focusing on sustainable sourcing and regenerative agricultural practices.
- **Positive Value Chain:** Concentrating on reducing packaging waste, improving climate impact, and enhancing water stewardship.
- **Positive Choices:** Aiming to provide healthier options for consumers, promoting better dietary choices.

This approach is reflected in PepsiCo's industry-leading sustainability reporting program. PepsiCo reports progress against its sustainability goals in a manner intended to support ESG analysis for investors, ESG raters and NGOs. Indices and framework responses and other topic-specific disclosures are provided to help map reporting to specific metrics established by popular reporting frameworks including SASB, TCFD and CDP (climate, water, and forest). It also includes specialised reporting, such as PepsiCo's annual Green Bond Report.

PepsiCo expects its top 200 suppliers to actively engage in setting or committing to a science-based target (SBT), share their SBT-aligned decarbonisation plan and annual progress, and report Scope 1 and 2 emissions. PepsiCo actively collaborates with agricultural suppliers to develop action plans for sustainable ingredients and build regenerative agriculture acres. PepsiCo provides resources and capacity building programmes for suppliers to set SBTs and measure scope 1 and 2 emissions.

For tier-1 suppliers in the Asia Pacific, including China, PepsiCo has launched the Clean Energy Procurement Academy alongside global companies such as Apple and Nike as well as the Clean Energy Buyers Association. Suppliers are equipped with the skills and knowledge needed to access and transition to clean energy, with the aim of integrating it into global supply chains. In partnership with Schneider Electric, PepsiCo also offers education for value chain partners about renewable electricity choices. They also seek to accelerate the transition of their suppliers to renewable electricity through aggregate power purchase agreements (PPAs) and other options.

Sustainable packaging is also a key area of focus for PepsiCo. PepsiCo continues to advance its efforts to design packaging that is sustainable with the aim of building a more circular economy. To work towards this vision, supplier engagement is vital for the transition to recycled or mono materials upstream, and recycling collection and innovation downstream. Beverage packaging is tied closely with bottlers and joint ventures, while snacks are primarily company-owned. Sustainability initiatives involve significant collaboration with Subject Matter Experts for manufacturing and packaging redesign, focusing on recyclable materials and improving recyclability through m eans like mono-material packaging. The company is proactively transitioning away from multi-material packaging, which is not recyclable due PET layers, towards mono-material packaging that is compatible with recycling infrastructure.

PepsiCo is taking action to improve water efficiency in both high-water stress and non-high-water stress locations. To help achieve these water efficiency opportunities, PepsiCo has partnered with N-Drip, a micro irrigation solution providing precise irrigation. PepsiCo's partnership aims to help farmers in supply chain adopt high-efficiency irrigation technology across 25,000 acres by 2025. N-Drip's gravity-powered technology combines the water-saving benefits of high-pressure drip irrigation with lower energy, operating and maintenance demands.

To support the ability of farmers and suppliers to meet PepsiCo's Supplier Code of Conduct, PepsiCo works with farmers to provide training for on-field agronomy, resource-efficient use of fertilisers and irrigation, plant protection techniques, workers' rights, pest management and other issues. PepsiCo also supports regenerative farming practices with a focus on building soil health and fertility, reducing emissions and sequestering carbon, improving watershed health, protecting and enhancing biodiversity, and improving farmer livelihoods. Other key initiatives include enhancing women's empowerment in farming communities and providing financial training for farmers.

"When helping to educate farmers, once they are able to understand the different aspects of what we're doing, adoption of new practices tends to be well-received. For example, we educated farmers in Chiang Mai about the benefits of not burning biomass but using it to improve soil health, reducing the artificial fertilisers they're using which is one of their big farm input costs. We've seen this work well in big farms in China as well as smallholder farms in Thailand and Vietnam."

Ashley Brown, Chief Sustainability Officer, Asia-Pacific, PepsiCo

THAI WAH: TARGETING LONG-TERM SUSTAINABLE GROWTH

Thai Wah is a regional leader in starch and starch-related food products. Headquartered in Bangkok, Thailand, the company is celebrating its 78th year of business, with 16 operations spanning across six countries, including new expansions in Cambodia, India, and the Philippines.

Over the years, Thai Wah has implemented sustainable practices that aligned with business goals and impact. Today, the company's sustainability strategy focuses on four pillars: farmer development, green factories, community health and safety, and sustainable food products – all of which contribute to the baseline of better commercial performance and impact. For instance, Thai Wah has transitioned from a model based on transactional relationships with farmers, to one that supports farmers' livelihoods through better crop varieties, digital and agtech solutions that provide weather and yield forecasting, and by connecting farmers with a team of agronomists. Thai Wah has also developed their own bioplastics mulch film to help the farming community and improve soil health. These efforts led to Thai Wah obtaining the gold certification on the Sustainable Agriculture Initiative (SAI) platform, and to date, the company has impacted close to 50,000 farmers throughout Cambodia, Thailand, and Vietnam with an ambition to impact up to 1,000,000 more.

In building greener factories, the company aims to use 50% renewable energy by 2025, up from 20% in 2023, through solar power and biogas. Additionally, the company focuses on cultivating plant-based ingredients and biodegradable products, including bioplastics derived from tapioca starch, in order to create more sustainable food products. Working with its Tier-1 suppliers, Thai Wah has dedicated around three years to developing sustainable plastic solutions, in response to growing consumer demand. Acknowledging that their products affect millions of consumers, Thai Wah is leading the charge to shift toward more organic, clean-label goods which contain lesser chemicals; to ensure that their products are good for health, and sustainable for the planet.

"We believe that we don't necessarily just need to work with big companies; we've also been working with a lot of SMEs as well to develop products together with us. It's good to help a local business to grow together as Thai Wah grows – our aspiration is to be a global company, (and we would like) to work with a partner and grow for decades and decades together."

Hataikan Kamolsirisakul (Kam), Head of Strategy, Sustainability & Innovation, Head of New Business Group, and Chief of Staff, Thai Wah Group

Image © Thai Wah

OLAM AGRI: TRAINING AND EQUIPPING PRODUCERS AND INTERMEDIARIES

Established in 1989 to trade cashews from Nigeria to India, the Olam Group now supplies food, ingredients, feed, and fibre to over 20,900 customers across the world. A leading food and agri-business, its value chain spans over 60 countries and includes farming, processing, and distribution operations, as well as a global network of farmers. Its complex agricultural supply chain extends from seed to shelf. As an operating group of Olam Group, Olam Agri focuses on the global demand for food, feed, and fibre. In Southeast Asia, Olam Agri is present in Indonesia, Singapore, Thailand, and Vietnam.

Olam Agri's products include grains, oilseeds, animal feed, rice, edible oils, specialty grains and seeds, cotton, wood products, and rubber. With a global footprint across multiple trade flows, its value chain across Asia engages large- and small-scale suppliers from across multiple origins employing different sourcing models ranging from direct farmer engagement to working with larger traders and mills.

Olam Agri's sustainability strategy is focused on three cross-cutting initiatives - regenerative agriculture, climate transition, and nutrition - as it aims to deliver positive impacts on the climate, nature, and livelihoods in line with its purpose to transform food, feed, and fibre for a more sustainable future. To support its efforts, Olam Agri's commitment to responsible sourcing includes traceability and supplier compliance monitoring, where it uses both in-house solutions such as the digital agricultural solution Spyder and Olam Farmer Information System. Its external solutions include the palm oil supply chain monitoring platform Palmoil.io and forest data platform Global Forest Watch. Olam Agri provides direct financing to intermediaries such as mills and traders through crop purchase advances and subsidies to purchase equipment. They also engage in tripartite agreements to facilitate access to finance.

To support suppliers and intermediaries, such as mills and traders, as well as smallholder farmers, Olam Agri helps provide training and support to meet sustainability requirements, reduce carbon footprints, and ensure soil regeneration. These sustainability efforts are enhanced by partnerships with entities such as governments, universities, industry associations, and financial institutions. Olam Agri is also a member of the Roundtable for Sustainable Palm Oil (RSPO). These partnerships are crucial for providing funding, technical assistance, and regulatory support.

"While there are growing requirements for sustainability disclosures, I would emphasise that as an agri-business, we do this regardless of whether we are asked. There are new opportunities to explore as we think about how we can help farmer incomes, incentivise sustainable initiatives, and support or finance the transition to lower carbon farming practices, perhaps through premium markets for low-carbon certified goods. It's a niche but growing market with many opportunities."

Julie Greene, Chief Sustainability Officer, Olam Agri

Image © Olam Agri

VITASOY: SETTING CLEAR STANDARDS

Vitasoy has been providing high-quality, high-protein soy products to consumers since 1940. With a purpose to "advance the world's transformation towards a sustainable future, through the amazing power of plants", Vitasoy considers sustainability as a key engine for value creation and growth and strives to innovate products for a healthier society and planet.

In terms of supply chains, Vitasoy sources locally as much as possible. By ensuring direct interactions with contract soy farmers and local partners, Vitasoy is better able to control their sustainability performance and standards. Suppliers are requested to acknowledge Vitasoy's Supplier Responsibility Principle, allowing Vitasoy to align sustainability goals throughout their supply chain and achieve a close-to-100% response rate for their questionnaire sent to suppliers across Mainland China and Hong Kong SAR, which they are progressively extending to other target markets.

To encourage suppliers to work with partner sustainability consultants for audits, Vitasoy reviewed and shortlisted consultants who are technically qualified yet reasonably costed and are affordable to SMEs. Vitasoy then requests that suppliers select a consultant from this shortlist to conduct an audit. For suppliers who are already certified in environmental and social standards (e.g. ISO14000), they can submit the information to Vitasoy to be considered for exemption from this requirement. Auditing practices benefit Vitasoy but also bring value to other buyers their suppliers may engage.

"Sustainability is challenging with resource constraints, especially at current economic environment – from our perspective and also the suppliers' perspectives, profits have been squeezed everywhere. Where we see sustainability being really effective is when it naturally works with the economics, if people can make money or savings out of it."

Simeon Cheng, Group Director - Sustainability, Vitasoy International

Despite the significant roles played by MNCs, their reach will still be limited to the MSMEs which are already, or have a high potential to be, their suppliers. It remains that this sector had the lowest ESG-awareness among MSMEs, and the lowest level of implementation of ESG practices. There is much to do, to enable more MSMEs to be part of these global supply chains. Hence, there is still a crucial role for national level players, be they government bodies or industry associations, to do more to raise awareness of the importance of embracing sustainable practices.

In addition to solutions developed in-house by these MNCs, there are also **roles for innovative external solution providers** to accelerate ESG practice adoption by smallholder farmers and MSMEs.

These technology-driven solutions can provide access to crucial services enabling the transition to sustainable or regenerative agricultural practices for farmers at the deepest tiers of the supply chain, as well as comprehensive views of supply chains for MNCs. **Impact investors are key in funding these MSME-focused solutions.**

KENNEMER FOODS INTERNATIONAL, INC. AND LGT: FINANCING FARMERS

A solution provider that sits within the Mars ecosystem is the Philippine agribusiness company Kennemer Foods International, Inc. (KFI). KFI specialises in the growing, sourcing and trading of high-quality agricultural crops such as fermented cacao beans sourced from smallholder farmers. KFI started as a smallholder sourcing program in the Philippines and expanded to include access to financing, social training and community development, and ecosystem support activities that integrate end-to-end processes for quality control.

Kennemer and Mars started their collaboration in 2012, establishing a technical partnership to improve the knowledge of cocoa farmers in the Philippines. This led to KFI developing their comprehensive Cacao Growership Programme based on the Mars Cacao Development Model, which gives farmers access to high-yielding planting materials, farm inputs and ongoing technical training and support; as well as access to global cacao markets.

These efforts were supported and strengthened through the partnership of the private bank LGT. LGT provided business expertise, access to international cocoa experts, potential buyers and institutions, and social impact measurement experts, and equity funding for KFI's Series A and B rounds. An LGT Impact Fellow also helped Kennemer to set up Kennemer's microfinancing arm. These joint efforts have improved KFI's ability to supply cocoa to Mars from the Philippines, as KFI has emerged as a trusted partner as Mars centralises quality management, in turn contributing to the livelihoods of Philippine farmers.

KOLTIVA: TRACEABILITY FOR MNCS

Koltiva is an integrated fintech, agritech, and climate tech company headquartered in Jakarta, Indonesia. Koltiva prioritises sustainable development by supporting farmers and producers in improving farm productivity, meeting food safety regulations, and improving incomes. Koltiva's solution provides farmers access to high-quality inputs, sustainable markets, knowledge on good agricultural practices, and financial services. Koltiva's KoltiTrace solution is able to support large MNCs by digitising and verifying global supply chains, focusing on enhancing traceability, inclusiveness, and sustainability. These allow MNCs to ensure the mitigate environmental risks in its supply chains. Commodities traced on Koltiva's platform include cocoa, coffee, rubber, rattan, and bananas. In its Series A financing round, Koltiva was backed by impact investors including **AC Ventures, SilverCape, and The Meloy Fund**.

Investors like **Touchstone Partners** also contribute by investing in impactful solutions for the F&B sector. With their local expertise of Vietnam, Touchstone can iterate solutions with startups to challenges less obvious to investors from abroad. For example, Touchstone has invested in **enfarm**, a seed-stage agritech company in Vietnam that leverages AI and IOT to optimise crop nutrition. Enfarm seeks to address the critical challenge of inefficient fertiliser use in agriculture, which contributes to 5% of global greenhouse gas emissions. Enfarm's solution draws on real-time data from soil sensors and smartphone applications to provide lab-grade precision readings of nitrogen, phosphorus, and potassium in soils, coupled with actionable recommendations from AI to reduce fertiliser waste and optimise crop performance.

Touchstone has also partnered with **Temasek Foundation** to launch the **Net Zero Challenge**, a global climate innovations competition. One of programme's key themes is **Food Systems & Sustainable Agriculture**. The challenge is supported by philanthropic organisations, institutionalising support in a yearly challenge providing grants and non-dilutive prizes for winners.

"Many industries in Vietnam are going through a digital transformation, including everything from healthcare to education, supply chains, FMCG, and retail. Our focus is around sustainability and the green economy in general, especially sustainable agriculture which forms a big economic base for Vietnam. We also look to technology to contribute to preparedness for climate change."

Khanh Tran, Managing Partner, Touchstone Partners

Lastly, **access to financing for better quality inputs, operational expenses, and capacity building** can be facilitated not just by MNCs and solution providers, but also by **financial institutions and investors**. **Cheaper financing** is a key form of support that many MSME respondents favour in the food and beverage sector, including **lower interest rates for sustainability and ESG-related loans** and **lower interest rates for loans for companies meeting sustainability and ESG standards**.

Image © Touchstone Partners

Figure 51: Financial institution support for increasing ESG practices

Simplified applications/ faster approval for sustainability/ ESG-related loans	37%	8%	17%	33%
Zero collateral requirement for sustainability/ESG-related loans	32%	5%	16%	24%
Lower interest rates for sustainability/ESG-related loans	33%	9%	38%	41%
Lower interest rates for loans for companies meeting sustainability/ ESG standards	17%	7%	54%	48%
Grants, subsidies, or prizes	21%	24%	46%	21%
Specialised training and upskilling on ESG fundamentals and practices	19%	3%	14%	34%
Advisory/consultancy related to sustainability/ESG	12%	2%	28%	17%
Technology such as digital tools to enable reporting and compliance	10%	5%	13%	27%

Weighted sample: n = 1,040 | **Survey question:** Which types of support from financial institutions would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top two types of support for each country are highlighted.

Image © Marriott

Image © Olam Agri

Several financiers have stepped in to meet this demand. These include venture capital and private equity firms as well as banks. Not only have these investors developed and incorporated comprehensive ESG strategies, but they see financing and technical assistance for MSMEs, especially smallholder farmers, as central to their investment theses. Similar to their MNC counterparts, many financiers have recognised the challenges MSMEs face in terms of in-house expertise related to ESG. Hence, many have also provided or **supported specialised training and upskilling for ESG fundamentals and practices**, as well as **advisory and consultancy related to sustainability and ESG**.

In December 2021, Hong Kong-based private credit manager, **ADM Capital**, launched its first impact product, the Asia Climate-Smart Landscape Fund (ACLF). The Indonesia-focused fund has a 50% guarantee at the asset level from U.S. International Development Finance Corporation and offers mid-market SMEs secured, direct lending solutions. ACLF has set targets in emissions reduction, better land use management, improved livelihoods and gender. Borrowers are primarily processors and mills purchasing from agricullure, agroforestry, and aquaculture supply chains and selling into international markets. Companies receive growth and/or working capital in return for delivering on the impact targets and managing ESG risk according to IFC performance Standards. Given that many Indonesian SMEs lack internal E&S capacity and policies, ACLF provides support and technical assistance to borrowers, and often in collaboration with external partners. This often includes supporting SMEs to meet traceability and certification requirements of their clients and markets, as well as to develop E&S management systems of their own.

"When we undertake our rigorous due diligence ahead of investing in an SMEs, we focus equally on the financials and the ESG risk as well as the potential for delivering impact across our four targets. Although our engagement with our borrowers can be a heavy lift, particularly initially, we hope the support we provide builds resilience in our companies. We are working to future-proof our borrowers and to advance our objective of a solid exit when the time comes."

Lisa Genasci, Managing Director, Sustainable Finance at ADM Capital

The Paris-headquartered global asset management company **Mirova** recognises that while SMEs in the food and beverage sector are crucial players in the global economy, they tend to face challenges in accessing corporate credits and capital markets. To bridge this gap, Mirova provides long-term financing which promotes supply chain integration with additional manufacturing capacity and value-add products offering enhanced traceability and certifications. Additionally, Mirova, together with its partners, provides technical assistance, training, and capacity building to their investees, by doing so promoting the use of best practices in their respective sectors. While noting that regulatory changes take time, Mirova chooses to be proactive in navigating the regulatory landscape by staying at the forefront of market trends and advocating for better policies.

Mirova has invested in more than 70 natural capital projects globally. Namely it is an investor in the aforementioned **Kennemer Foods International**. They have also invested in **Mountain Hazelnuts**, an outgrower scheme in Bhutan working with impoverished farmers to plant nut trees in degraded areas, increasing incomes and restoring lands. The company is a fully integrated supplier which distributes high-quality nuts to international markets. Another company they have invested in is **JALA**, an aqua-tech company in Indonesia which offers several solutions aiming at making the shrimp value chain more sustainable, traceable, efficient, and inclusive. Their offering includes a mix of SaaS, hardware, financing, trading platform and farm franchise where IoT and AI technologies are central.

"Entrepreneurs often see commercial benefits not only of pushing the impact agenda, but because adaptation can create virtuous business models which are most robust and sustainable."

Antoine Raes, Investment Director at Mirova

CONCLUSION

The complexity of the F&B supply chain and the sheer number of actors and stakeholders involved poses significant challenge for F&B MSMEs transitioning for sustainability. **Each stakeholder, from smallholder farmers to processors to manufacturers requires tailored support and solutions.** Holistic approaches will be needed to coordinate activities across the ecosystem. Mars stands out as one such example that has been able to work with smallholder farmers, financiers, digital solution providers, and government agencies to design and implement programmes for smallholder farmers.

More coordinated efforts, potentially led by government agencies or industry associations, are needed to support the fragmented food and beverage supply chain. The stakes are material given Southeast Asia's growing population and demand not just for sustainable and healthy food options, but to meet fundamental needs for the region's food sufficiency. Emerging solutions for traceability can facilitate greater participation from MNCs and impact investors to advance holistic approaches across the supply chain, ensuring the adoption of sustainable agricultural practices at scale.

06 Electrical and Electronics

ECONOMIC SIGNIFICANCE AND GROWTH PROSPECTS

The electrical and electronics (E&E) sector in Southeast Asia is a significant driver of economic growth, both as a growing consumer market as well as a production hub.

Consumption is being driven by similar demographic trends as other sectors. The overall electronics market in Southeast Asia is expected to reach US$30 billion in 2025, growing to US$41 billion by 2029 at a compound annual growth rate (CAGR) of 8.38%.[104]

In terms of production, Asia continues to sit at the center of the world's integrated circuit supply chain, a core component of most of the world's electronic devices. While Taiwan continues to be a leading global producer of semiconductors, the industry has also seen substantial growth in Southeast Asia, owing to supply chain and geopolitical realignments. Malaysia, the Philippines, Singapore, Thailand, and Vietnam have seen continued growth as nodes in global semiconductor supply chains. Overall, Southeast Asia contributes more than 10% to global semiconductor parts and component exports.[105]

Southeast Asia's E&E sector is also a vital supplier of components to industries like electric vehicles, semiconductor devices, consumer electronics, and industrial electronics. While ASEAN countries primarily contribute to assembly and testing, Singapore is an exception with capabilities in design and fabrication. 2.4 million people across ASEAN work in the sector. [106] E&E contributes to a significant share of exports of goods in most of the countries we studied - accounting for **5.54% of total exports in Indonesia, 39.9% in Malaysia, 35.5% in Singapore, and 34% in Vietnam** in 2024.[107]

US$30 billion
expected size of Southeast Asia electronics market in 2025

12.3 billion kilograms
of e-waste generated by Southeast Asia in 2021

676
MSMEs surveyed from the E&E sector

68%
of E&E MSMEs surveyed report being moderately and very familiar with sustainability and ESG issues

104 Statista (2025): Electronics - Southeast Asia.
105 Asian Development Bank (2023): ASEAN and Global Value Chains: Locking in Resilience and Sustainability.
106 ASEAN-Japan Centre (2021): Global Value Chains in ASEAN-Electronics.
107 Badan Pusat Statistik (2025): The Value of Exports (Million US$), 2025; Malaysia External Trade Development Corporation (2025): Trade Performance 2024; Singapore Department of Statistics (2025): Singapore's International Trade; General Statistics Office of Vietnam (2025): Exports and Imports Value by Months of 2024. Calculations by CIIP.

RESOURCE EFFICIENCY AND WASTE MANAGEMENT ARE KEY CHALLENGES IN THE ELECTRICAL AND ELECTRONICS SECTOR IN SOUTHEAST ASIA

Electronics manufacturing is resource-intensive, involving large amounts of energy, water, and labour which strains local communities and the environment. The main node of productive activity is the factory, with production facilities consolidated in industrial parks and other similar developments. Many of the MSMEs in the E&E sector operate with asset-heavy solutions, requiring significant capital investments to support growth. The high energy consumption of these factories creates both cost pressures and sustainability challenges, especially as global clients impose stricter environmental and energy efficiency standards. These challenges are often compounded by poor working conditions and high inputs costs. Improving **resource efficiency** in these facilities is crucial to mitigate negative social and environmental impacts.

In terms of consumption, the surge in the demand of E&E products has led to a significant increase in electronic waste, or e-waste, across the region. These include discarded electronics and electrical devices, ranging from small appliances like clocks and lamps to larger household machines like refrigerators. Short product life cycles and low recycling rates exacerbate the issue. Southeast Asia continues to face challenges in treating uncontrolled used electrical and electronic equipment as well as locally generated e-waste.[108] In 2022, 30 billion kilograms of e-waste was generated in Asia, but only 3.6 billion kilograms was formally collected and recycled.[109] In 2021, **Southeast Asia alone generated 12.3 billion kilograms of e-waste**.[110] The informal sector plays a key role in waste management, but often lacks proper technologies and knowledge for environmentally sound treatment.

In addition, minerals like lithium, cobalt, nickel, and rare earth elements remain essential to produce electrical and electronics products, which form the raw material inputs that MSMEs further upstream utilise. Indonesia, Myanmar, the Philippines, and Vietnam hold significant reserves of these minerals and elements.[111] The mining of these metals can lead to significant environmental damage, resulting in the pollution of water, soil, and air. Growing demand for electronics products and pressure to adopt electric vehicles will increase the strain on mining minerals for battery production.

These challenges in the E&E sector can also become **potential opportunity areas for innovative business solutions and impact investors**, especially given the continued growth of consumption of E&E products. E&E MNCs play a **key role in encouraging the adoption of more sustainable and efficient practices among their suppliers**, while investors and startups help address additional challenges in **resource efficiency and e-waste management**.

In this report, we focus on several key segments of the E&E sector, including manufacturing services, industrial equipment, networking and communication equipment, electric vehicles assembly, computer and office products, and consumer electronics. All data in this chapter refer to the E&E sector, for which we surveyed **676 MSMEs**.

108 Economic Research Institute for ASEAN and East Asia (2023): Circular Value Chains of Electrical and Electronic Equipment in ASEAN.
109 International Telecommunication Union and United Nations Institute for Training and Research (2024): Global E-waste Monitor 2024.
110 KrAsia (2023): E-Waste: Southeast Asia's Growing Environmental Concern.
111 Australian Strategic Policy Institute: The Strategist (2024): Southeast Asia's potential in critical minerals.

WHAT FORMS OF SUPPORT DO E&E MSMES REQUIRE?

Global E&E supply chains are highly complex, involving multiple cross-border activities spanning procurement, manufacturing, fabrication, and quality control before products reach end-users. MSMEs in this sector often need to meet diverse supplier standards and regulatory requirements across jurisdictions. While direct consumer demand for sustainably produced electronics may be less prominent compared to other sectors, the pressure to align with international compliance and sourcing standards remains high. Reflecting this, **80% of E&E MSMEs surveyed** reported being moderately to very familiar with ESG and sustainability issues, the highest among all sectors in the study.

On a country basis, the percentage of MSMEs reporting high levels of familiarity varied, ranging from **7 to 65%** in markets across the region.

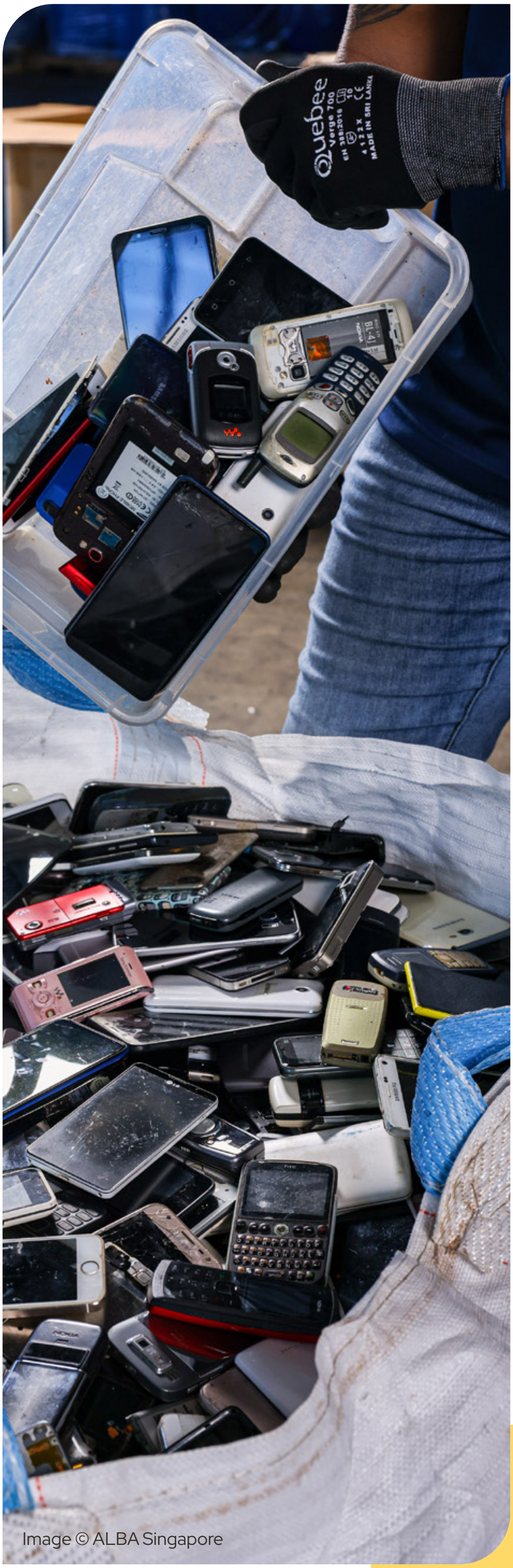
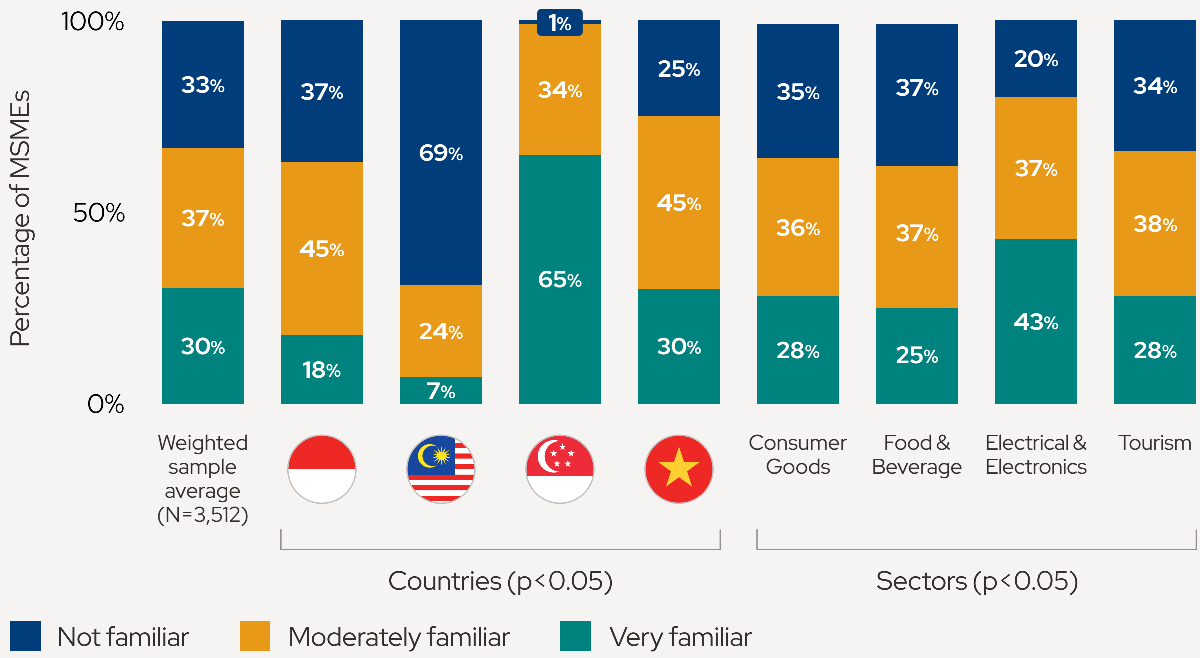


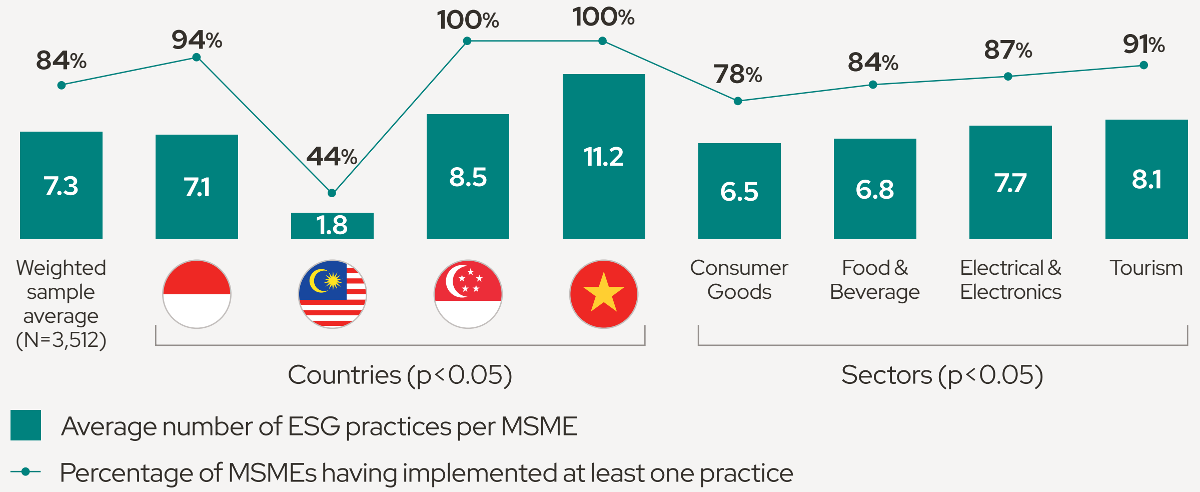
Image © ALBA Singapore

Figure 52: ESG awareness varies across different countries and industry sectors



Survey question: How familiar is the management of your company with the concept of sustainability/ESG for business?
Note: Figures have been rounded to the nearest whole number.

Figure 53: ESG practice adoption rate across countries and sectors – average number of practices and percentage of MSMEs implementing at least one

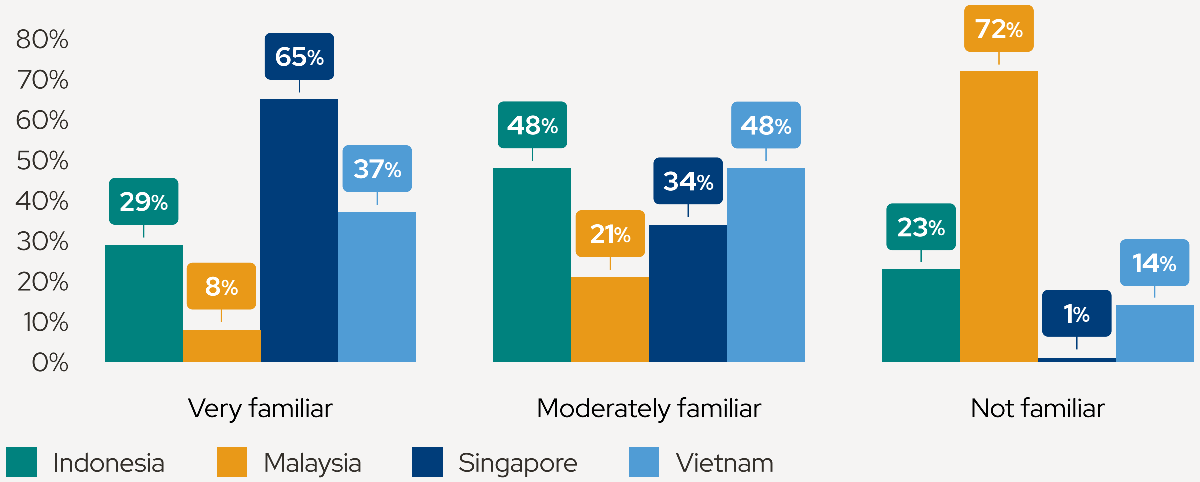


Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value of less than 0.05 indicates statistical significance, in which the null hypothesis is rejected. Figures have been rounded to the nearest whole number.

However, there remains a gap between **awareness and implementation**. E&E MSMEs have adopted the **second lowest number of ESG practices** among MSMEs across all four sectors, at 6.5. The sector also has the **lowest percentage of MSMEs having implemented at least one practice at 77%**.

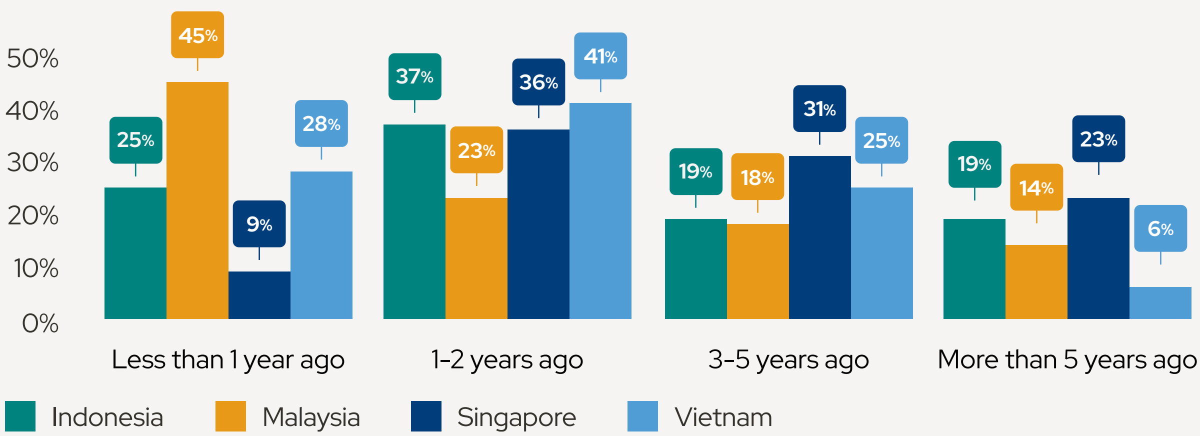
MSMEs from Singapore and Vietnam are more likely to have adopted ESG practices in the last 3 to 5 years. However, as E&E MNCs continue to increasingly locate hubs, factories, and other operating entities in markets in Southeast Asia, it is likely that levels of adoption will increase.

Figure 54: ESG awareness varies across different countries



Weighted sample: n = 676 | **Survey question:** How familiar is the management of your company with the concept of sustainability/ESG for business?

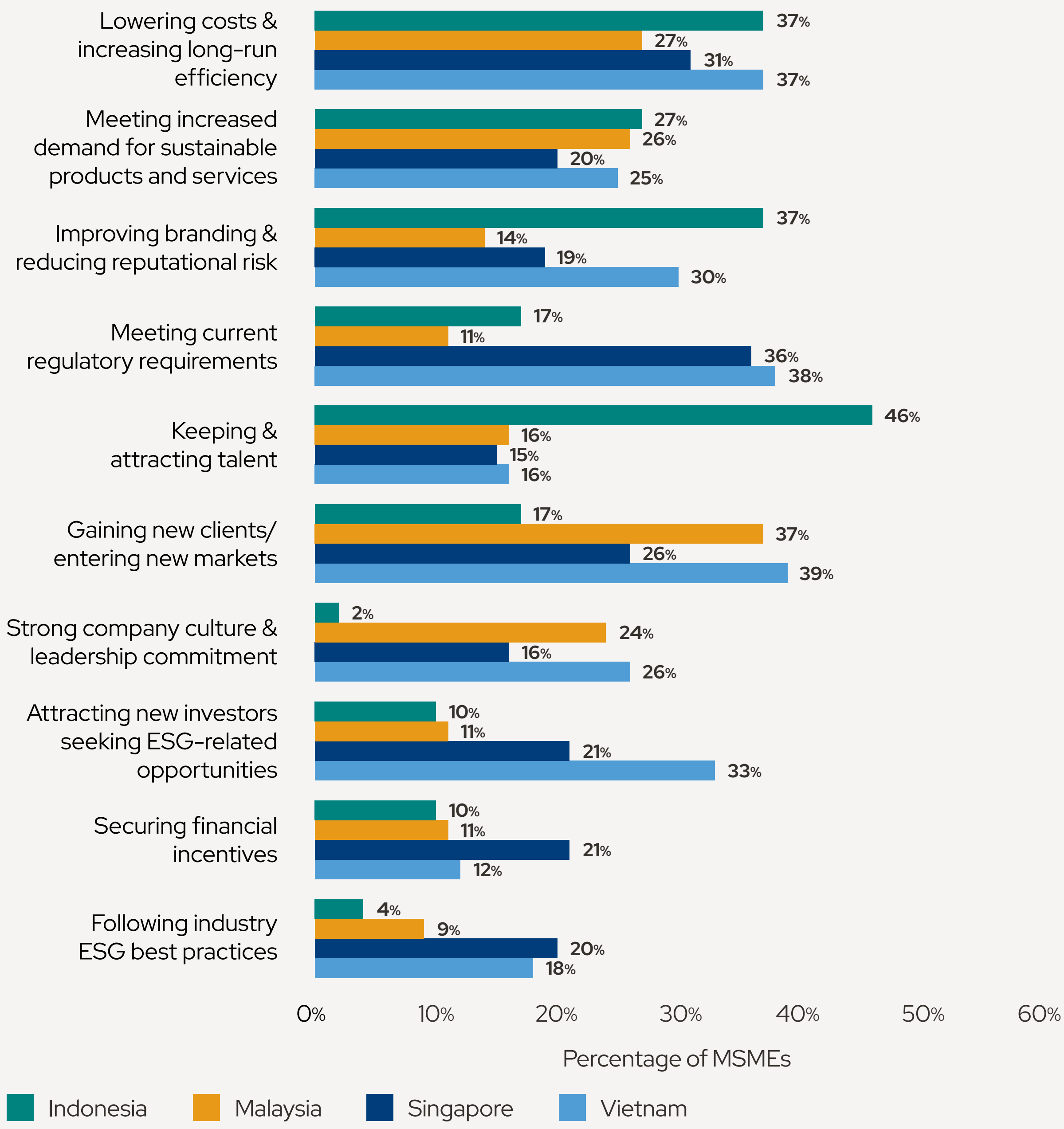
Figure 55: Year of initial ESG adoption by companies



Weighted sample: n = 910 | **Survey question:** When did your company first begin adopting ESG policies or practices?

As is common across all MSMEs in our study, the main drivers for ESG adoption are **lowering costs and increasing long-run efficiency, meeting increased demand for sustainable products and services, and improving branding and reducing reputational risks**.

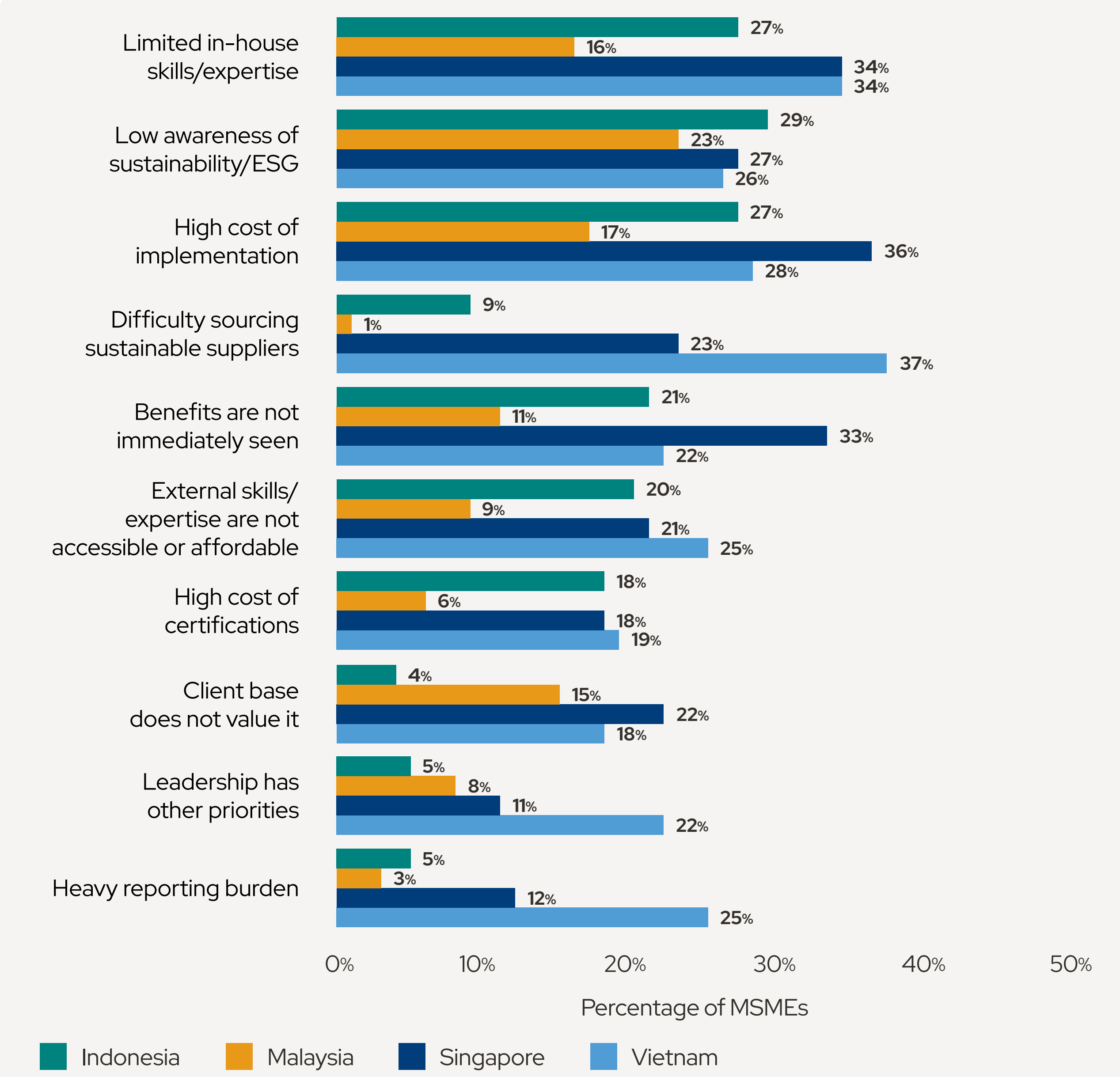
Figure 56: Key reasons for adopting sustainability/ESG practices in each country



Weighted sample: n = 556 | **Survey question:** Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options.

Key barriers remain for implementation, with limited in-house skills, low awareness about ESG, and high implementation costs emerging as the top challenges for the E&E sector. Low awareness for ESG is the top challenge for Indonesian and Malaysian E&E MSMEs, while high implementation costs are the primary difficulty for Singaporean MSMEs and sourcing sustainable suppliers the biggest barrier for Vietnamese MSMEs. Low awareness of ESG issues may be surprising given the global orientation of the sector. There remain opportunities for MSMEs in Indonesia and Malaysia to receive stronger support in cultivating ESG awareness, while defraying costs and enlarging the pool of sustainable suppliers will remain key in Singapore and Vietnam.

Figure 57: Key challenges to adopting sustainability/ESG practices in each country



Weighted sample: n = 676 | **Survey question:** What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options.

ECOSYSTEM RECOMMENDATIONS AND OPPORTUNITIES IN THE E&E SECTOR

Given the sector's supply chain complexity, intensive use of resources and high levels of waste generation, transparency in supplier requirements is crucial. Adherence to supplier codes of conduct for suppliers is crucial to secure **commercial incentives from large clients**.

In the course of our study, we engaged several MNCs and solution providers which offer products and services across electrification, electric vehicles, semiconductors, and other categories – each with a well-developed strategy to manage ESG risks within their supply chains. In the following sections, we build on the recommendations highlighted in Chapter 3, and show how they apply to the E&E sector through examples which we hope can inspire more to follow.

Firstly, MNCs play a leading role in driving behavioural change among MSMEs through **supplier codes of conduct and capacity building**. Many MNCs have already introduced supplier codes of conduct and made training available, creating transparent commercial opportunities for suppliers. MNCs can also drive cost savings for MSMEs through **greater resource efficiency and other approaches**.

Figure 58: Corporate client incentives for increasing ESG practices

Longer-term contracts guaranteeing steady business	54%	10%	40%	44%
Higher prices for sustainable products or services	29%	6%	41%	28%
Preferential payment terms such as shorter payment cycles	16%	5%	31%	26%
Guaranteed minimum purchase volumes	18%	7%	25%	24%
Bonuses or incentives for meeting sustainability targets	21%	5%	25%	20%
Grants, subsidies or awards	5%	14%	19%	14%
Specialised training and upskilling on ESG fundamentals and practices	9%	2%	13%	34%
Advisory/consultancy related to sustainability/ESG	13%	1%	11%	29%
Technology such as digital tools to enable reporting and compliance	7%	1%	14%	28%

Weighted sample: n = 676 | **Survey question:** Which types of incentives from a corporate client would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top two incentives for each country are highlighted.

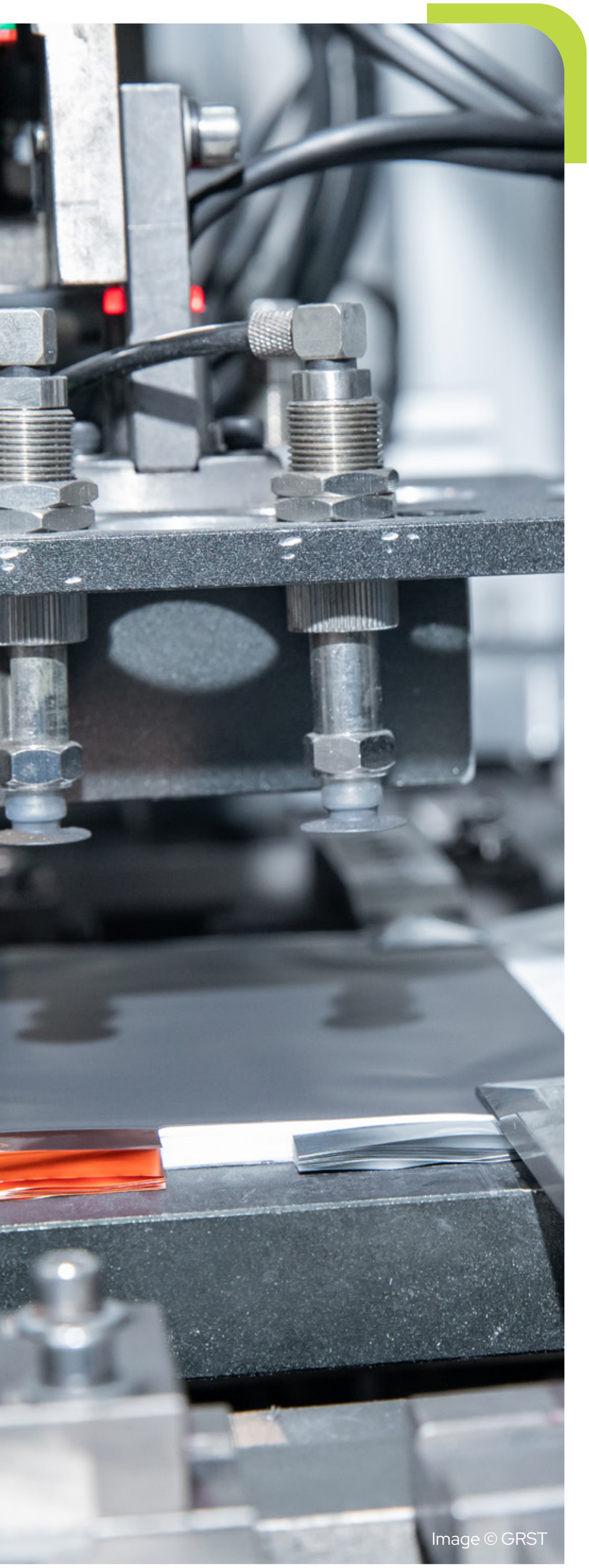


Image © GRST

Secondly, **solution providers can provide innovative methods to address the challenges of waste management, component recycling, and resource intensity**. The scale and intensity of the sector's challenges mean that significant attention will need to be placed on streamlining operations to mitigate its social and environmental impact.

"There's no level playing field nor template that says 'when you do this, this is what you are saving for the future, for the downstream [or] what is then incorporated'. We are harnessing solar energy, right? But we don't see the report, from the telcos, for example, to see how much energy is being harnessed, how much is being saved, how much carbon footprint is actually being reduced."

E&E MSME in Singapore

"With MSMEs the resources to track and allocate the resources to do ESG, and the cost gets higher the smaller the company, fewer personnel. Having 1-3 personnel dedicated to ESG, it's very difficult."

E&E MSME in Malaysia

Stringent standards and requirements from MNCs will help to induce behavioural change among the MSMEs in their supply chain, which will be crucial in helping to **improve resource efficiency, and mitigate environmental and social risks**.

SCHNEIDER ELECTRIC: EMPOWERING MSMES TO DECARBONISE THROUGH SMART TOOLS AND TARGETED SUPPORT

Schneider Electric prioritises supply chain initiatives as central to its sustainability mandate. As a global leader in energy management and automation, Schneider Electric supports smart industries, resilient infrastructure, future-proof data centers, intelligent buildings, and intuitive homes. The Zero Carbon Project aims to reduce carbon dioxide emissions from Schneider Electric's top 1,000 suppliers, representing about 70% of their upstream emissions. These efforts include energy optimisation projects, renewable energy sourcing, and collaboration with suppliers to implement best practices and achieve sustainability ambitions. To address challenges such as data scarcity and the lack of systematic methods for suppliers to quantify and track emissions, Schneider Electric offers various capability-building initiatives. These include training, workshops, and digital tools to help SME suppliers measure and reduce their carbon impact.

Schneider Electric has implemented several initiatives to promote sustainable practices among SMEs. One such initiative is **Zeigo Activate**, a software-as-a-service platform that assists SMEs in tracking, analysing, and reducing their carbon emissions. Zeigo creates personalised decarbonisation plans and provides access to specialists for energy projects, including improved energy efficiency and renewable energy sourcing. Additionally, Schneider Electric has collaborated with **Enterprise Singapore** to launch the **SME Kickstarter Decarbonisation Programme**. This programme offered training and mentoring to over 100 SMEs over three years, equipping them with the knowledge and guidance needed for their sustainability journeys, with a particular focus on decarbonisation.

"As a company with a global footprint of factories, distribution centers, and commercial offices, our supply chain is committed to innovation and sustainability. We actively engage our partners in sustainability initiatives, making it a core mission of procurement and supply chain operations. Together, we strive to create a decarbonised, more responsible future."

KL Koay, Vice-President of Procurement, International Region, Schneider Electric

NIO INC.: PARTNERING WITH SUPPLIERS TO EMBED ESG PRACTICES INTO MANUFACTURING PROCESSES

NIO Inc. designs, develops, jointly manufactures, and sells premium smart electric vehicles. Alongside their vehicles, they invest in next-generation technologies in autonomous driving, digital technologies, electric powertrains and batteries. While 90% of NIO Inc's supply chain value originates from suppliers in Hefei, China, 10% of its manufactured parts from Tier-2 and Tier-3 suppliers is sourced from Southeast Asia, Europe, and the United States. The majority of NIO's semiconductor raw materials or parts come from Southeast Asia. NIO is working with hundreds of Tier-1 suppliers and pushing them to work with sub-tier companies to embrace new technologies and implement ESG measures. NIO has gradually extended sustainability requirements to the admission and daily management processes of partners. In 2022, they conducted ESG special risk assessments for more than 300 vehicle parts partners, identified ESG risk points, and helped improve the overall sustainable development performance of the supply chain.

"As a smart EV company, we highly recognise the importance of reducing carbon emissions across our entire value chain. To achieve this, we calculate carbon emissions from raw material extraction to Tier-3, Tier-2, and Tier-1. MSMEs have various levels of understanding of sustainability. To reduce our emissions numbers, we have to work with thousands of suppliers to make sure they understand this well. For example, we help aluminum manufacturers improve their recycling processes through educational initiatives We truly regard our suppliers as business partners and are happy to see more and more partners develop a greater understanding of sustainability."

Feng Shen, Executive Vice President and Chairman of Quality Management Committee, NIO Inc.

VITROX: BUILDING SUPPLIER CAPABILITIES

ViTrox is a Malaysia-headquartered company that designs and manufactures automated inspection equipment and embedded electronics devices, with competent expertise in machine vision inspection systems. ViTrox focuses on creating shared value with suppliers, addressing sustainability challenges, and implementing key strategies such as adhering to its supplier code of conduct and prioritising local procurement. ViTrox faces several sustainability challenges in its supply chain, including geopolitical uncertainties, natural disasters, varying expertise levels among smaller suppliers, and the complexity of tracing materials to ethical sources. ViTrox addresses these challenges through proactive approaches and close collaboration with suppliers. Through its Supply Chain Sustainability Management approach, ViTrox raises awareness of its sustainability expectations among suppliers via training and knowledge-sharing sessions while also enhancing supplier capabilities and conduct through a structured performance evaluation process.

"As a business, we recognise our profound responsibility to protect our environment and ensure the advancement of society and well-being of humankind."

Chu Jenn Weng, Managing Director, President, and Group CEO, ViTrox

WHA GROUP: PIONEERING INDUSTRIAL SOLUTIONS THROUGH INNOVATIVE MODELS

WHA Group is Thailand's leader in fully integrated logistics and industrial facilities, where they own and manage more than 3 million square meters of industrial properties and develop 15 Industrial Estates in Thailand and Vietnam, with a total industrial land of 12,600 hectares. These Industrial Estates are home to more than 1,110 corporate customers and have attracted more than USD 46 billion in investments cumulatively. In 2017, WHA Group expanded into Vietnam, establishing industrial estates predominantly in the North Central region, including major production hubs for the E&E sector such as Nghe An and Thanh Hoa Provinces.

WHA is playing an active role in supporting the green transition by integrating cutting-edge technology and exploring innovative solutions. WHA offers clean energy solutions to industrial customers, including solar rooftop installations with long-term power purchase agreements (PPA). By the end of 2024, WHA secured private PPA solar rooftop projects totaling 290 MW. In addition, WHA Mobilix is providing logistics operators access to EV technology with 3 main services, covering EV Rental, EV Charging, and the Mobilix Transportation Optimisation Software Solution, enabling the transition to EVs instead of relying on existing internal combustion engine fleets. These models can help fulfil customers' requirements to reduce Scope 1 emissions. In its first year since entering business, Mobilix rented out around 280 units in 2024 and will increase the scale of the program going forward. Moreover in 2025, WHA will introduce a carbon accounting platform for WHA customers, providing support to address knowledge gaps in managing their climate change strategies.

"I expect to see the landscape changing in Southeast Asia – people, companies, will be spending more resources to address sustainability and carbon reduction. There are regular talks among relevant private and public stakeholders, as well as across all levels, from national to the local municipal level, to make the world a greener place to live (in). So I expect that we will see Southeast Asia heading in a greener direction in the next 5-10 years."

Pajongwit Pongsivapai, Chief Executive Officer, WHA Industrial Development Public Company Limited

Image © WHA Group

Solutions to incentivise the adoption of ESG practices lie not just with MNCs, but also with new business models. There is opportunity for solution providers to address the demand for resource intensity management solutions, through innovations leading to new digital and technology solutions. Impact investors **play a key role in financing these solutions to scale**.

NIO Capital is a venture capital and private equity firm that focuses on investments in energy, automobiles, and deep technology sectors. Leveraging the worldwide surge in climate technology advancements, NIO Capital strategically concentrates on two pivotal sectors: New Mobility and New Energy, focusing on digitalisation and decarbonisation. These two segments contribute to up to 40% of China's GDP. Investing in early-stage ventures, seed, late-stage ventures, private equity, and post-IPO, NIO Capital has built a comprehensive ecosystem, bringing together NIO Inc., a leading premium EV brand in China, along with over 80 portfolio companies that have established leadership in their respective sectors, including auto components, renewable energy, energy storage, and more. Some companies in NIO Capital's portfolio that actively contribute solutions for the E&E supply chain include the green energy storage solution **AlphaESS**, the glassless solar panel developer **Sunman**, the autonomous driving technology provider for the mining sector **Eacon**, and the global lithium-ion battery pioneer **CATL** and **CALB**. NIO Capital's objective is to be a leading responsible-investing industrial capital firm connecting ESG contribution with financial performance.

"We see ESG both as offence and defence in our investment strategy. New mobility and new energy are two very large industries and under those industries we've identified sectors with tremendous opportunities for further commercialisation. While they seem big, these industries are actually relatively small and young, but we believe there is tremendous potential to reshape everything in the next 10 to 20 years. At the same time, embedding sustainability factors into the whole investment process will also help with managing increasing regulation and compliance. We believe clean and climate technologies will generate greater impact by becoming successful businesses."

Maggie Ye, Managing Director, NIO Capital

SOLUTIONS FOR ENERGY EFFICIENCY AND EMISSIONS REDUCTION

ARCSTONE

Headquartered in Singapore, **Arcstone** serves clients and partners across Indonesia, Malaysia, Thailand, and Vietnam. Arcstone has a full suite of toolsets designed to digitally run shop floors among E&E MSMEs and integrate them across the global manufacturing supply chain. This includes by equipping equipment with sensors, ensuring an accurate, live set of machine data on energy and material consumption. Arcstone also leverages their Manufacturing Execution System (MES) to connect these processes with inventory management in enterprise resource planning. Within their own system, they label, tag, and scan content to have an accurate count on material used and the impact it causes on sustainability numbers, based on efficiency and the scrapping of materials to properly calculate the impact on carbon dioxide emissions. Their MES is also used to measure and monitor the impact of carbon dioxide emissions from the actual suppliers of parts and components that go into final assembly plants. Arcstone helps factories manage their production process ranging from quality to equipment effectiveness, allowing them to link these processes across suppliers. This allows large end-customers to have full visibility from the source of raw material all the way up to the finished goods. Arcstone uses a foundational and light weight manufacturing execution system or integrator toolset at each supplier to provide a fully transparent and real-time data stream flowing from key suppliers up to an enterprise control tower.

"Ultimately the visibility to the consumer is what is the true game changer in the sustainability space as it raises awareness and helps to transform regulatory requirements to mandate the visibility and improvement of ESG metrics."

Wilson Deng, CEO, Arcstone

AQUILA

Founded in Singapore in 2023, Aquila was established as a tech & data infrastructure company addressing the demand from large corporates for monitoring solutions for energy efficiency, carbon dioxide emissions, and other ESG KPIs in real time. By providing Automated, Accurate and Auditable data from IoT sensors, Aquila has been able to support corporate initiatives in ESG reporting, decarbonisation, and securing sustainable finance. Aquila also targets SME clients, providing monitoring enabling them to reduce carbon dioxide emissions and save electricity through timely notifications on operations inefficiencies and actionable recommendations driven by real-time data insights. Since 2024, Aquila has used its data insights to originate debt financing in the E&E sector. By integrating real-time IoT data into loan origination, Aquila provides financial institutions with credible, verifiable insights into SME borrowers' sustainability performance, reducing investment risks and enabling better credit terms. Aquila has provided working capital to renewable energy, electric vehicles, industrial, and agriculture automation projects across Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. As of February 2025, Aquila has originated and deployed over US$10 million of debt financing to different sustainable projects with SMEs across Southeast Asia.

"Aquila's platform empowers E&E SMEs to secure the funds needed for sustainable and resource-efficient technologies with reduced pressure for their clients on upfront CAPEX. As a result, SMEs can more rapidly implement energy efficiency solutions and expand operations. We accelerate the uptake of resource-efficient business models across Southeast Asia."

Giando Zappia, Co-Founder & President, Aquila

Beyond driving down costs and improving resource efficiency, **e-waste management** for all stakeholders in the sector remains a huge challenge. This is only set to grow given rising consumption levels in Southeast Asia. E-waste management requires a **holistic approach cognisant of the entire life cycle of E&E products**, including innovative solutions during the manufacturing process and for end-of-life treatment of products. The solution providers below have created approaches to e-waste management serving stakeholders ranging from MSMEs to MNCs.

OPPORTUNITIES IN E-WASTE MANAGEMENT

ALBA SINGAPORE

The Singapore-based company ALBA Singapore is innovating to collect regulated E-Waste. ALBA has more than 50 years of experience in Europe and more than 20 years in Asia in the waste management and recycling industry. The company is part of ALBA Group Asia with its headquarters in Hong Kong SAR, and has its operating facilities in China, Indonesia, and Singapore. With its vision for a World without Waste, the company focuses on four business areas, namely: Smart City Solutions, Plastics Recycling, Green Gas & Green Fuel Technology, Hazardous Waste Recycling & Management.

In Singapore, the company has been appointed to be the Producer Responsibility Scheme Operator for E-Waste and has launched over 870 E-Waste recycling bins across Singapore alongside Singapore's National Environment Agency. As part of this role, ALBA has spearheaded the implementation of a nationwide E-Waste collection system in Singapore. ALBA utilises a data monitoring system to monitor and analyse the flow of E-Waste and and sorts the collected E-Waste into different categories at their Logistics & Sorting Hub. The sorted E-Waste is then sent to ALBA's licensed recyclers who meet environmental and health standards, and whose technical process ensure proper recovery for secondary raw materials.

The company has also developed the ALBA STEP UP mobile app which allows users to keep track of their recycling habits and the carbon footprint reduction that has occurred as a result. ALBA has been able to develop its initiatives across Singapore partnering with electronics MSMEs such as producers and retailers, as well as government representatives and private sector partners.

"With the set-up of the e-waste collection system in Singapore and the collaboration with local recyclers, ALBA is working towards reducing waste generation and boosting domestic recycling rates. In our role, we ensure that the regulated e-waste is being collected, sorted and sent to licensed recyclers."

Jakob Lambsdorff, Chief Executive Officer, ALBA Singapore

OPPORTUNITIES IN E-WASTE MANAGEMENT

GRST

GRST, which stands for Green Renewable Sustainable Technology, is a Hong Kong-based company that manufactures eco-friendly lithium-ion batteries. The battery industry faces sustainability challenges, including the need for more minerals, efficient recycling, and the elimination of toxic chemicals **such as PFAS (per- and polyfluoroalkyl substances), also known as 'forever chemicals' due to their persistence in the environment and resistance to breaking down**. GRST's key innovation is its water-soluble electrode binder which is used to build a battery rather than toxic solvents and hard-to-recycle materials. This allows lithium, cobalt, and nickel to be extracted more economically for reuse in new batteries at the end of battery life, reducing demand for further resource extraction through mining. GRST's method can reduce greenhouse gas emissions from production by 40% and significantly reduce recycling environmental and financial costs while boosting recovery yields. GRST's solution fits seamlessly into the supply chains of electric vehicles and other applications.

At present, their batteries are used mainly in electric two-wheelers in China, in addition to stationary storage projects, home storage, and small solar backup systems. Through joint ventures, GRST plans to provide its binder material more broadly while partnering with local investors to build factories and scale production. GRST is also developing a free battery passport to help MSMEs comply with new EU regulations, making sustainability reporting more affordable. A winner of the 2023 Earthshot Prize and participant of the Amplifier, a mentorship programme for high impact startups established by the Centre for Impact Investing and Practices and the Philanthropy Asia Alliance, **GRST has secured catalytic capital to finance its goals**.

"Lithium-ion batteries made with our electrode coating system have no toxic PFAS Forever Chemicals and can easily be recycled to high quality black mass through simple water dissolution instead of thermal, chemical, or mechanical processes. By making it much easier to recycle batteries, there will be more batteries collected for recycling for economic reasons due to efficient material recovery. If you have a higher yield of lithium and other materials, that means less future mining required because the volumes of these metals from recycling will be higher. We want to ensure electrification's contribution to the green transition happens in a circular non-toxic way."

Frank Harley, Director, GRST

Image © GRST

OPPORTUNITIES IN E-WASTE MANAGEMENT

KARO SAMBHAV

A circular economy solution provider based in Gurugram, India, Karo Sambhav focuses on material circularity, aiming to solve the end-of-life product problem across multiple sectors like electronics, plastics, batteries, and glass. Karo Sambhav's e-waste collection centres are present in all states across India, collecting laptops, desktop computers, notebook computers, printers, mobile phones, air-conditioners, washing machines, and fridges, among other electronic goods.

In addition, they are also setting up a network of recycling units of which two are already operational. They work closely with companies and brands and enable them to collect and recycle waste related to their products. They also design and implement Extended Producer Responsibility Programmes. Karo Sambhav's technology platform also collects and manages data throughout the waste collection and recycling process.

Karo Sambhav was supported by grant funding from the **DBS Foundation**. They also received accompanying banking support via the 'Business for Impact Banking Package' by DBS SME Banking and DBS Foundation which comprises preferential banking solutions including a working capital loan, multi-currency account and access to skills- and capacity-building programmes.

"One thing which is very clear to us is this is not a single person journey. We are talking about hundreds of organisations and Institutions collaborating and finding trust with each other. For recycling to be carried out in an impactful manner, we will need the entire ecosystem to evolve and mature. Starting from electronics, we have developed solutions for glass, batteries, plastic packaging, and are now evaluating other sectors."

Pranshu Singhal, Founder,
Karo Sambhav

CONCLUSION

The E&E sector will continue to be a contested sector due to geopolitical sensitivities over critical minerals and components, the increasing sophistication of consumer electronics and electric vehicles, and growing demand for electronics in Southeast Asia. This will increase scrutiny over the supply chains of these products and the MSMEs supporting them. Rapid innovation across MNCs and startups will be vital to meet the challenges for the sector, particularly in **driving cost savings, capacity building, resource intensity management, and e-waste management**. Establishing clear supplier codes of conduct and strengthening supplier capacity will be essential to **build supply chain resilience and unlock new commercial opportunities**. Financial institutions and impact investors, will also be key to ensuring that MSMEs can meet the sustainability demands of regulators, clients, and customers.

Image © ViTrox

07 Tourism

ECONOMIC SIGNIFICANCE AND GROWTH PROSPECTS

The travel and tourism industry in Southeast Asia is a significant part of the regional economy, supporting over 38 million jobs.[112] In 2022, the tourism industry in Southeast Asia contributed over US$241 billion to GDP, with 39 million tourist visits. By the following year, visits burgeoned to 91 million, and expected to have returned to pre-pandemic levels of approximately 120-130 million by end of 2024.[113] Destinations in Southeast Asia also rank among the world's most visited. Thailand was the 8th most visited country in 2024,[114] attracting 35.5 million visitors.[115] MSMEs play a vital role in this sector as hotels, homestays, spas, and tour operators. For example, Chiang Mai's small boutique hotels and family-run homestays attracted over 4.7 million visitors in the first five months of 2023.[116] Similarly, MSME-led tour operators in Indonesia's Bali and Komodo islands offer personalised experiences like eco-trekking, while those in Vietnam and Malaysia promore community based tourism and handicrafts. MSMEs adapt to local contexts, offering unique experiences that link global markets to local communities.

The growth of the region's tourism industry is supported by collaborative initiatives such as the ASEAN Tourism Strategic Plan, which promotes seamless travel across member states, and enables the region to attract global travellers. Key projects, including integrated visa schemes and cross-border infrastructure development, have also elevated the region's appeal to emerging markets like India, China, and the Middle East, while reinforcing intra-regional tourism among ASEAN citizens. **Tourism will remain a critical pillar in supporting the ASEAN economy, particularly for both B2C and B2B MSMEs.**

US$241 billion
contributed by the travel and tourism industry to Southeast Asia's GDP in 2022

91 million
number of tourist visits to ASEAN in 2023; expected to have returned to pre-pandemic levels of ~120-130 million by end of 2024

802
MSMEs surveyed from the tourism sector

66%
of tourism MSMEs surveyed report being moderately and very familiar with sustainability and ESG issues

112 World Travel & Tourism Council (2024): Travel & Tourism Economic Impact 2023: South East Asia.
113 Invest in ASEAN (n..d): Tourism.
114 WP Travel (2024): Most Visited Countries in the World 2020-2024: Statistics.
115 The Business Times (2025): Thailand sees economy growing up to 3.5% this year on stimulus, foreign investment.
116 The Nation Thailand (2023): Tourism numbers in Chiang Mai solid and on the rise.

KEY CHALLENGES IN THE TOURISM SECTOR IN SOUTHEAST ASIA

Key challenges among tourism MSMEs can be divided in terms of specific challenges encountered by **consumer-facing and business-facing MSMEs**, with the former including businesses like boutique hotels and tour agencies, and the latter consisting of suppliers to large hotel chains and other MNCs.

For B2C MSMEs, key challenges remain in terms of **resource efficiency**, particularly given the **electricity and water needed to manage their properties**, as well as **continued reliance on single-use plastics and convenience-based consumption** by tourists. While some destinations such as Singapore have incentivised low carbon travel options, many MSMEs still face barriers to transition to sustainable practices, including a lack of awareness and guidance on sustainability.

For B2B MSMEs supplying to larger players, many face **seasonality and demand volatility**, which affects cash flows and therefore their ability to implement practices **to meet sustainability requirements**. To meet the increasingly stringent supplier standards of international hotel chains, with procurement focusing on environmental, social, and government risks, these MSMEs will need to be inventive and incorporate sustainability concerns at the core of their businesses to drive cost efficiencies over time. These include the ability to track greenhouse gas emissions, address labour risks, and trace the origins of their own raw materials.

With growing demand for sustainable tourism in Southeast Asia, there are **significant opportunities** for stakeholders to support MSMEs, including developing ESG capabilities, improving business practices, and implementating digital tools to enhance resource efficiency and reduce food waste.

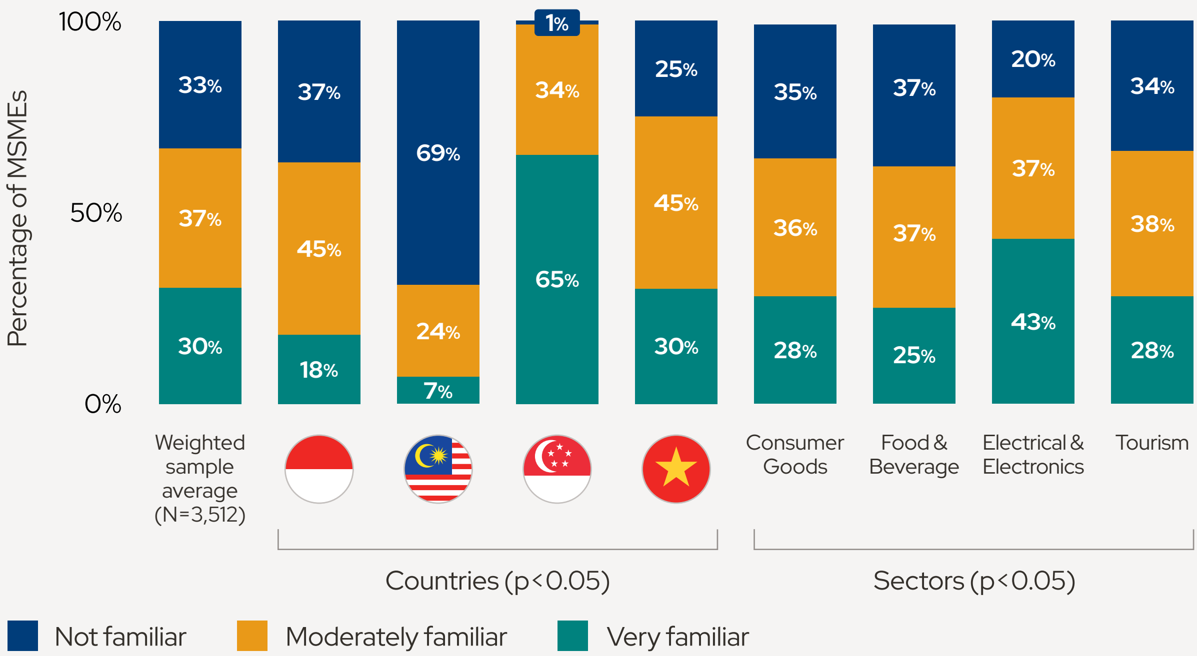
In this report, we focus on several key segments of the tourism sector. All data in this chapter refer to the tourism sector, for which we surveyed **802 MSMEs**.

WHAT FORMS OF SUPPORT DO TOURISM MSMES REQUIRE?

Due to the consumer-facing nature of MSMEs in the tourism sector, many have been exposed to higher levels of demand for sustainable services and programmes. We have identified two key stakeholders among the MSMEs in our survey: **consumer-facing MSMEs** including boutique hotels, artisans, and tour agencies, and **business-facing MSMEs** that supply to large hotel chains. **66% of tourism MSMEs surveyed** indicated being moderately and very familiar with sustainability and ESG issues.

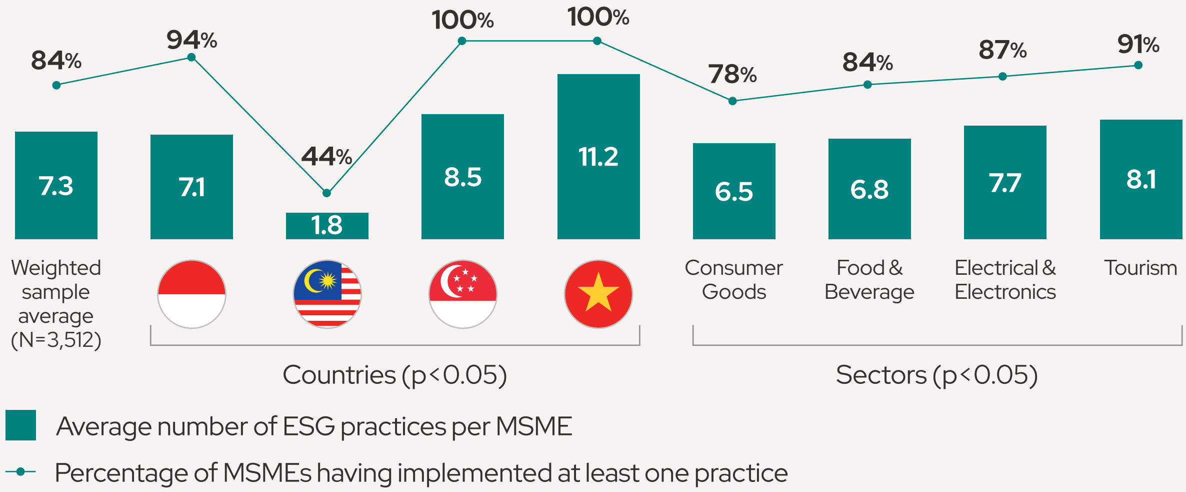
MSMEs in the tourism sector have **adopted and implemented the highest number of ESG practices**, with each adopting an average of 8.1 practices. 91% of MSMEs are also likely to have implemented at least one ESG practice, which is the highest alongside E&E across our study's four sectors. These are likely to have been driven by consumer demand for the greater adoption of ESG practices among the businesses they interacted with.

Figure 59: ESG awareness varies across different countries and industry sectors



Survey question: How familiar is the management of your company with the concept of sustainability/ESG for business?
Note: Figures have been rounded to the nearest whole number.

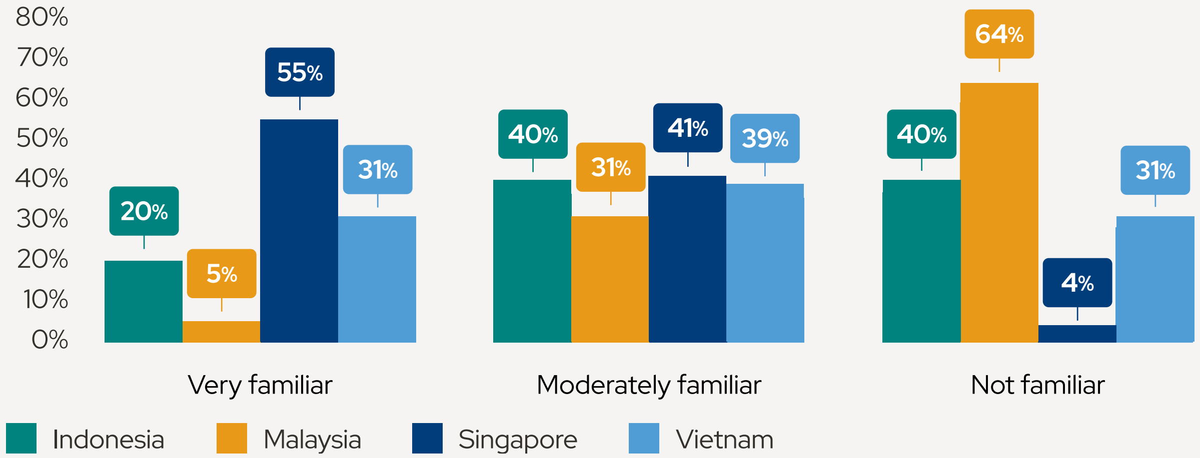
Figure 60: ESG practice adoption rate across countries and sectors – average number of practices and percentage of MSMEs implementing at least one



Survey question: Has your company taken any actions or adopted practices in the following areas to 1) reduce its environmental impact, 2) increase its social impact, and 3) ensure its good governance? Please select all that apply.
Note: A p-value of less than 0.05 indicates statistical significance, in which the null hypothesis is rejected. Figures have been rounded to the nearest whole number.

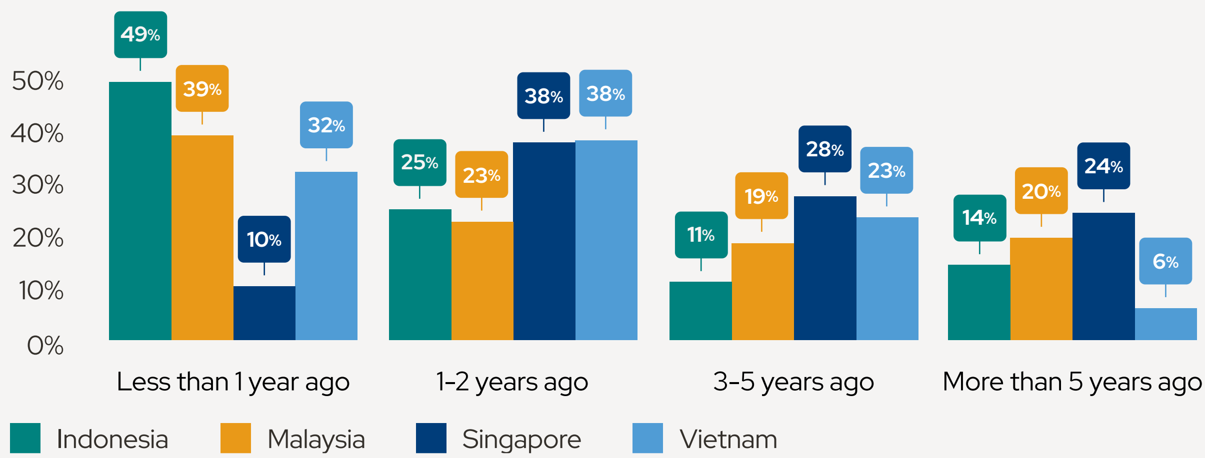
Based on our survey, when examined on a country basis, tourism MSMEs from Singapore display the greatest levels of familiarity with sustainability and ESG issues, followed by counterparts from Vietnam, Indonesia, and Malaysia. MSMEs in Singapore are also most likely to have implemented ESG practices the longest, though not by much compared to their peers in the region.

Figure 61: ESG awareness varies across different countries



Weighted sample: n = 802 | **Survey question:** How familiar is the management of your company with the concept of sustainability/ESG for business?

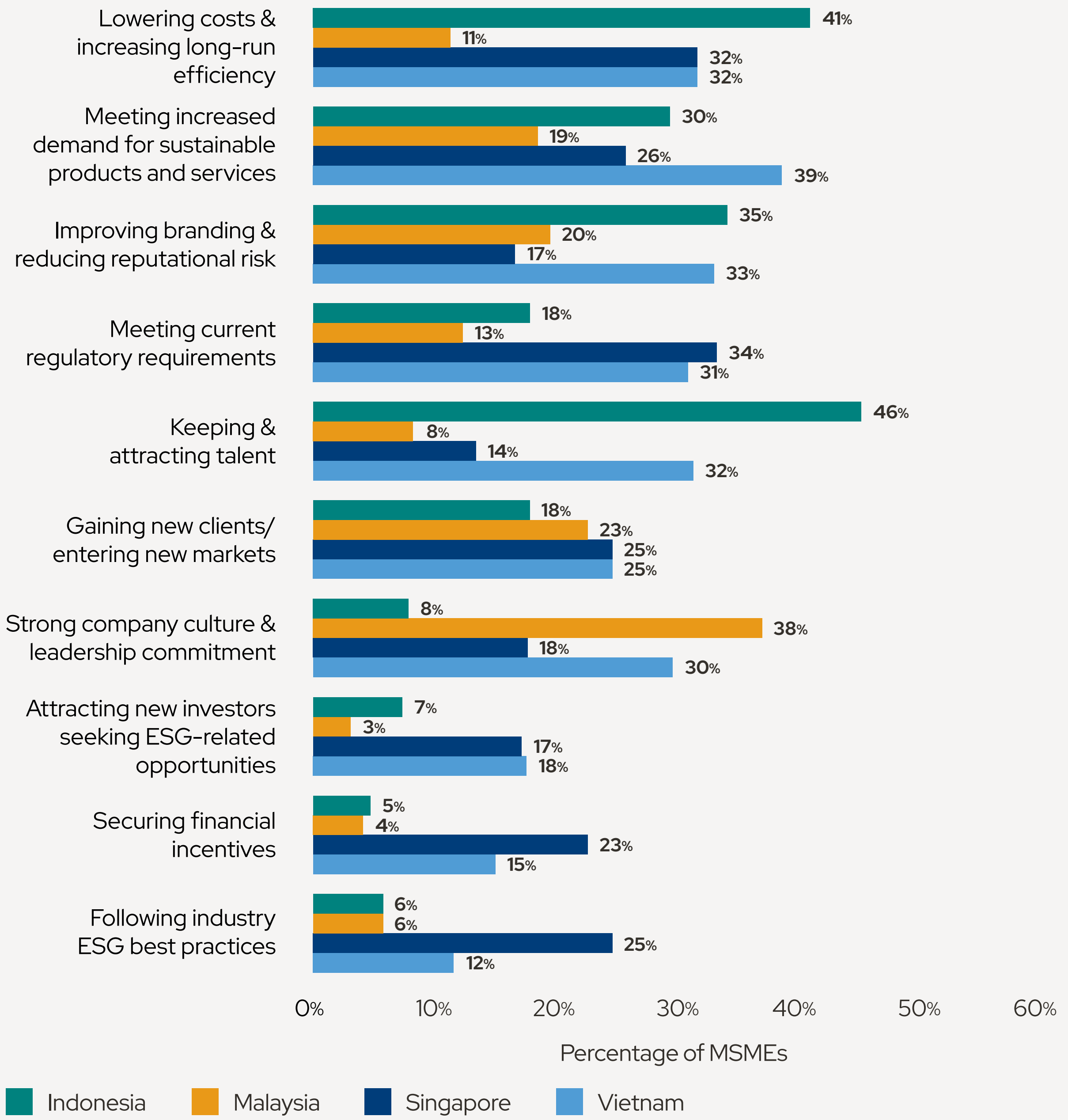
Figure 62: Year of initial ESG adoption by companies



Weighted sample: n = 700 | **Survey question:** When did your company first begin adopting ESG policies or practices?

As with MSMEs across the other sectors, the main motivations for the adoption of ESG practices are cost-savings through increasing long-run efficiency in business operations, meeting increasing customer demands for sustainable products and services, and measures to mitigate reputational risks.

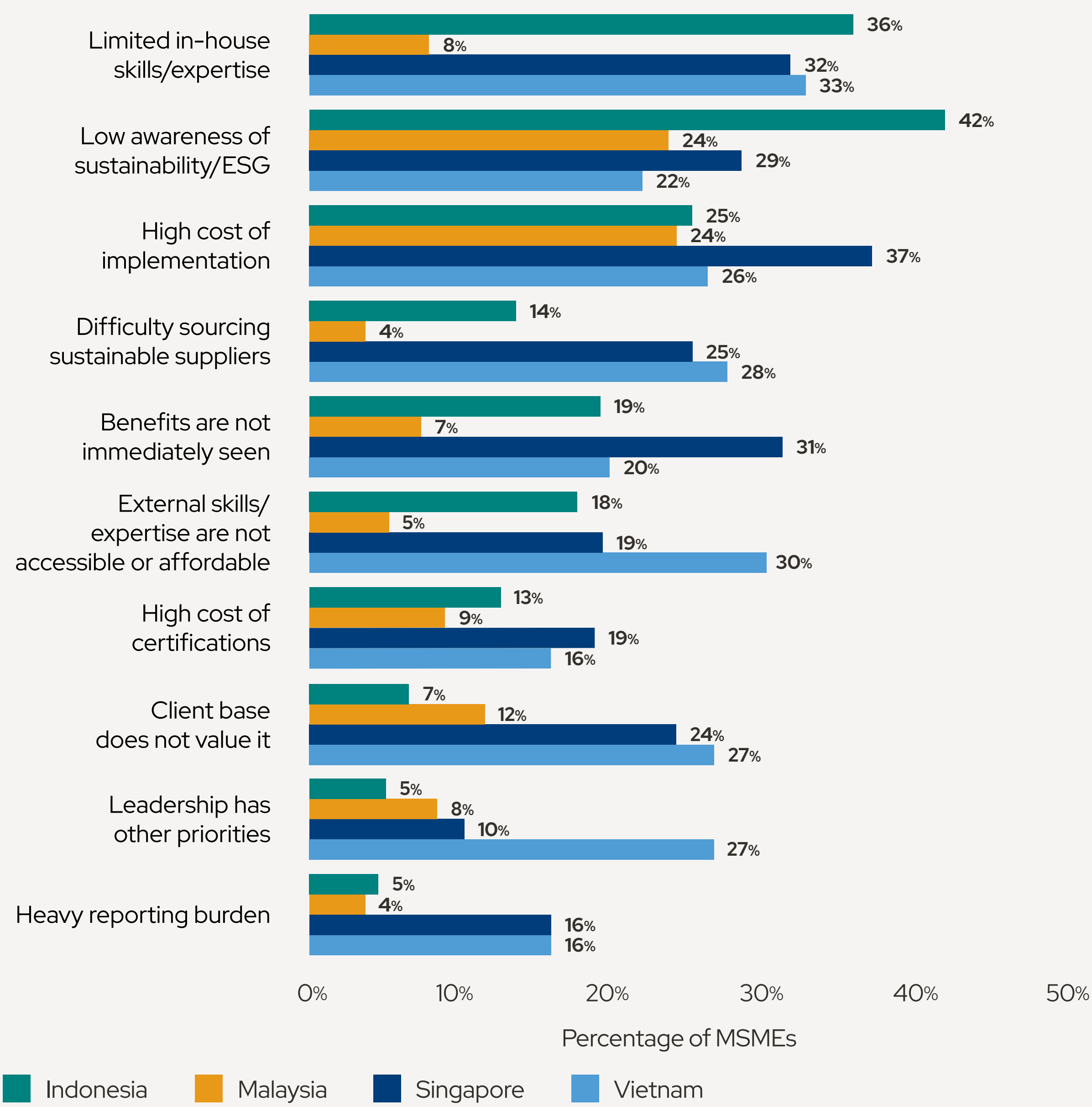
Figure 63: Key reasons for adopting sustainability/ESG practices in each country



Weighted sample: n = 839 | **Survey question:** Which of the following were the most important reasons for your company's decision to adopt sustainability/ESG practices? Please select up to 3 options.

For tourism MSMEs, different key challenges emerge across markets. In Indonesia, low levels of ESG awareness is the top barrier to ESG adoption and implementation. Malaysian MSMEs see both low ESG awareness and high implementation costs as their main challenge. For MSMEs in Singapore, high implementation costs comes out on top, while limited in-house skills are the primary barrier in VIetnam. Levels of ESG awareness among tourism MSMEs in Indonesia may be affected by the geographic diversity of the country, with different MSMEs facing different ESG concerns in their local contexts. The same may hold for Malaysia, though low ESG awareness has been a key challenge for MSMEs in the market as a whole. Similarly in Singapore, high cost of implementation emerged as the key challenge. **Opportunities for training, capacity building, and helping with implementation costs remain the most important for MSMEs in tourism.**

Figure 64: Key challenges to adopting sustainability/ESG practices in each country



Weighted sample: n = 802 | **Survey question:** What are the main challenges to the adoption of sustainability/ESG faced by your company? Please select up to 3 options.

ECOSYSTEM RECOMMENDATIONS AND OPPORTUNITIES IN THE TOURISM SECTOR

In the tourism sector, we see our recommendations divided in terms of the needs of consumer-facing and business-facing MSMEs, with different stakeholders taking the lead in each case. Improving ESG awareness and providing capacity building support for consumer-facing MSMEs can be led by **industry associations and government agencies**, whereas for business-facing MSMEs, such efforts will be driven by **MNCs and large customers**. **Solution providers** will also be necessary to help address challenges in food waste and improving resource efficiency, which can be tailored to stakeholders across supply chains.

Consumer-facing tourism MSMEs

Industry associations and government agencies can play a key role in supporting consumer-facing MSMEs through their sustainability transitions. The World Travel & Tourism Council (WTTC) is a global organisation dedicated to promoting sustainable growth and development within the travel and tourism sector. EU sustainability regulations are shaping global tourism by creating indirect pressures on MSMEs through large companies and international supply chains. In Southeast Asia, WTTC emphasises the need for early-stage adoption of sustainable practices in developing destinations integrating resilience into tourism planning. Examples include Sarawak's ecotourism focus and Thailand's sustainability scorecards for the travel industry. In 2022, WTTC introduced the Hotel Sustainability Basics programme in collaboration with major hotel chains like Jin Jiang International and Radisson Hotels. This initiative outlines 12 essential measures designed to help small and independent players begin their sustainability journey. By offering a clear and accessible framework, the programme ensures smaller operators are not left behind in the transition towards sustainable practices.

"We're likely to see some travel development that is unsustainable – development that fails to contribute to the local culture and community. While such instances will occur, I believe it's part of a broader spectrum. My hope is that organisations like ours can help drive a meaningful shift by accelerating support for and adoption of best practices."

Liz Ortiguera, Managing Director and Senior Advisor to the CEO, World Travel & Tourism Council

An example of a consumer-facing MSME is **Mana Earthly Paradise**. Located in Bali, Indonesia, Mana Earthly Paradise is a pioneering establishment in the field of sustainable tourism. Founded on the principles of environmental stewardship and community empowerment by the NGO Earth Company, With the intention to incorporate sustainable practices in its core business model, Mana is dedicated to sustainable tourism through eco-friendly architecture, solar energy, rainwater harvesting, and waste management systems. Through its three core business units—eco villas, a farm-to-table restaurant, and an ethical market—Mana champions environmentally conscious practices while fostering the growth of local MSMEs. Each aspect of Mana's operations is designed to be harmonised with the natural environment and support the local economy.

Mana's restaurant operates as a circular system, composting food waste to enrich the soil, creating a closed loop that minimises waste and enhances sustainability. The ethical market further exemplifies Mana's vision of fostering equitable and sustainable supply chain, which are guided by five pillars—eco, organic, socially minded, local, and ethical—market prioritises fair trade and local sourcing, working with artisans and small businesses to promote positive social impacts. By creating a platform for local entrepreneurs, the market empowers MSMEs and integrates them into a value-driven supply chain, ensuring that sustainability and profitability are mutually reinforcing.

"One of my dreams has been to launch an accelerator program for the market, vendors and suppliers, so that they can be empowered, get more knowledge, and be connected to potential funders to scale their businesses."

Aska Hamakawa, CEO,
Mana Earthly Paradise

Business-facing tourism MSMEs

Business-facing tourism MSMEs have very different motivations. **MNCs and large customers can play a key role in driving behavioural change among business-facing MSMEs through supplier codes of conduct and capacity building.** These include large international players as well as regional hotel chains. In examining demand-side incentives from corporate clients, **long-term contracts guaranteeing steady business** emerge as the most impactful incentive for driving ESG adoption.

Such tourism MSMEs demonstrate a stronger preference for financial support and pricing-related incentives. **Grants, subsidies, or awards** are preferred, followed by **bonuses or incentives for meeting sustainability targets and higher prices for sustainable products or services**.This highlights the sector's reliance on external funding and financial mechanisms to support their sustainability initiatives. Such preferences reflect the resource-intensive nature of tourism operations and the need for pricing structures that adequately reward sustainable practices. Tailored financial solutions and financial incentives from corporates therefore play a critical role in accelerating ESG adoption within the tourism sector.

Figure 65: Corporate client incentives for increasing ESG practices

				
Longer-term contracts guaranteeing steady business	48%	7%	21%	29%
Higher prices for sustainable products or services	29%	3%	35%	36%
Preferential payment terms such as shorter payment cycles	18%	3%	30%	29%
Guaranteed minimum purchase volumes	11%	6%	23%	14%
Bonuses or incentives for meeting sustainability targets	29%	8%	16%	43%
Grants, subsidies or awards	17%	24%	35%	29%
Specialised training and upskilling on ESG fundamentals and practices	23%	5%	26%	36%
Advisory/consultancy related to sustainability/ESG	11%	1%	23%	7%
Technology such as digital tools to enable reporting and compliance	7%	0%	33%	29%

Weighted sample: n = 290 | **Survey question:** Which types of incentives from a corporate client would most impact your company's decisions to consider further increasing its sustainability/ESG practices? Please select up to 3 options that apply. | **Note:** The top two incentives for each country are highlighted.

An example is **The Datai Langkawi** a luxury resort nestled in pristine rainforest in Langkawi, Malaysia. Datai has leveraged a platform developed by **Pantas Climate Solutions**, a Malaysia-based company that provides tailor-made software solutions for businesses seeking to effectively track, manage, and disclose ESG metrics, with a particular focus on carbon emissions. Leveraging a platform developed by Pantas, the resort tracks emissions across Scope 1, 2, and 3, with Scope 3 emissions—largely stemming from imported goods and beef consumption—constituting 68.8% of its overall carbon footprint in 2023. This has allowed Datai to shape its sustainability initiatives. For example, their in-house water bottling plant has demonstrated a positive return on investment, while beef was reduced in staff meals in favour of less-carbon intensive alternatives. Recognising the crucial role of MSMEs in driving sustainability, the resort works closely with local farmers, artisans, and vendors, ensuring mutual benefits that enhance both business operations and environmental outcomes. Datai also has a green policy for vendors to ensure that suppliers prioritise sustainable practices, such as eco-friendly packaging, although enforcement remains a challenge.

"At Datai, we see sustainability initiatives as valuable investments in enhancing guest experience, business reputation and providing good return on investments. We work closely with our suppliers, such as chicken farmers and local suppliers for fruit and vegetables to help reduce our carbon footprints."

Remi Giromella, Director of Quality Control and Improvement, The Datai Langkawi

"By helping our clients decarbonise to meet requirements to measure and manage emissions, we indirectly serve SMEs in their supply chains."

Max Lee, CEO & Co-Founder, Pantas

Image © The Datai Langkawi

HILTON: PROVIDING OPPORTUNITIES FOR MSMES TO SCALE

Hilton Worldwide Holdings Inc. is a leading global hospitality company with a portfolio of 22 world-class brands, including Waldorf Astoria, Conrad, Hilton Hotels & Resorts, DoubleTree, and Hampton. Founded in 1919 by Conrad Hilton, the company operates more than 7,500 properties in 126 countries and territories. The company launched its comprehensive sustainability strategy, Travel with Purpose, in 2011, aimed at redefining sustainable travel globally. Through their Travel with Purpose 2030 Goals, Hilton aims to:

- Reduce Scope 1 and 2 carbon emissions intensity from managed hotels by 75% (MT CO_2e/m^2, 2008 baseline)
- Reduce Scope 3 carbon emissions intensity from franchised hotels by 56% by working collaboratively with franchisees (MT CO_2e/m^2, 2008 baseline)
- Reduce water use intensity in our managed operations by 50% (Liters/m^2, 2008 baseline)
- Reduce landfilled waste intensity in our managed operations by 50% (MT/m^2, 2008 baseline)
- Create 5 million cumulative learning and career growth opportunities for all Team Members and communities
- Impact 20 million community members meaningfully

Hilton integrates ESG into its business strategy, emphasising that sustainability is not just about reducing harm but also about driving positive change. This holistic approach aligns with the UN Sustainable Development Goals, particularly focusing on goals related to climate action, gender equality, decent work, and economic growth. Hilton's ESG and supply chain initiatives are embedded within its operations, with a focus on energy efficiency, water conservation, waste reduction, and responsible sourcing.

Image © Hilton

Hilton's strategy is anchored in **Hilton Supply Management (HSM)**, a subsidiary of Hilton that serves as a leading provider of hospitality-focused supply chain solutions, serving a 22,000-property strong customer base, including 1,100 non-Hilton properties. HSM offers sourcing across all key categories in the hospitality industry and seeks to promote responsible, sustainable, and inclusive sourcing through **Source with Purpose**, their global strategy to advance positive impact across supply chains. The strategy's three key pillars include:

- **Responsible:** HSM leverages their Responsible Sourcing Policy, Animal Welfare Statement, and partnership with **EcoVadis** to ensure suppliers are responsible and ethical business partners and upholding the highest human rights standards at every level of the supply chain.
- **Sustainable:** HSM engages suppliers to work toward a low carbon future and to reduce waste to landfill, with a focus on greenhouse gas emissions reduction, waste reduction, and product materials.
- **Inclusive:** HSM actively engages and empowers suppliers in their journeys to become stronger stewards of people and the planet, particularly through local sourcing and education and development.

Supplier performance is reviewed continuously by HSM once a supplier is contracted, with an extensive review conducted when a contract is up for renewal. Significant suppliers are required to complete the EcoVadis Sustainability Assessment and meet minimum scores laid out by Hilton. If a supplier does not meet these requirements, they must commit to an EcoVadis Corrective Action Plan to improve their score for assessment the year after. Suppliers have access to resources and information to improve their ESG performance through EcoVadis.[117]

Hilton is committed to strengthening local economies by increasing its engagement with MSMEs and diverse suppliers. In 2023, the company sourced from more than 2,200 diverse and small businesses, with supplier spend exceeding $467 million. Across key markets in the EMEA region, Hilton properties now procure up to 70% of their food locally, reinforcing its commitment to local sourcing. These efforts highlight Hilton's dedication to fostering inclusive economic growth and sustainable procurement practices.


Image © Hilton

117 Hilton Supply Management (2025): Source with Purpose; Hilton Supply Management (2024): Our Approach to ESG Risk & Supplier Management.

MARRIOTT INTERNATIONAL: A GLOBAL HOSPITALITY COMPANY WITH A FOCUS ON LOCAL AND SUSTAINABLE DEVELOPMENT

From hotel design to guest experience, sustainability is embedded into Marriott International's business strategy. As the world's largest hotel operator, with over 9,300 properties across 36 brands in 144 countries and territories, Marriott takes pride in their responsibility to help address some of the world's most pressing social, environmental, and economic issues.

Marriott's sustainability strategy is driven by a wide range of initiatives that have been fostered throughout their history of putting people first, giving back to communities, and operating more responsibly to serve the planet. This includes efforts such as creating resource-efficient hotels, purchasing sustainable products, and supporting innovative environmental initiatives.

While the business value of sustainability continues to expand, regulatory frameworks and climate reporting environment have grown also rapidly around the world. Marriott continues to evolve to further sustainable hospitality. In April 2024, Marriott International became the largest global hospitality company with approval from the Science Based Target initiative (SBTi) for both its near-term and long-term science-based targets.

- **Sustainability Certifications**
- **Climate Action Program**
- **Responsible Sourcing**
- **Water Reduction**
- **Waste Reduction**

The company's sustainability efforts are focused on five specific areas: sustainability certifications, energy reduction related to the Climate Action Program, responsibly sourced goods, reducing water and waste. All hotels are expected to obtain an accredited sustainability certification (such as Green Key, Earth Check or Green Globe) by 2025.

Key highlights of Marriott's sustainability initiatives globally and in the region include:

Strengthening Environmental Stewardship

- Committing to setting a near-term science-based emissions reduction target and setting a long-term science-based target to reach net-zero emissions by no later than 2050.
- Developing a program to accelerate the installation and adoption of electric vehicle (EV) charging stations at hotels across the globe; as of year-end 2023 over 7,100 EV chargers have been installed at Marriott properties worldwide.
- With a focus on enhancing locally supplied produce and goods wherever possible and fostering community empowerment while reducing its carbon footprint. Some success stories within the region include:
  - Courtyard by Marriott Singapore Novena's restaurant, SKY22, receiving the Singapore Food Agency's Farm-to-Table (Mid-Tier) award in 2023 for its use of local produce sourced from SMEs such as BoomGrow in Malaysia. Other local SMEs such as Machine Farms and Tower Farms delivering precision and productivity through controlled environment farming and a sustainable approach in growing food produce.
  - Marriott showcasing their sustainability efforts in Thailand with the launch of JW Garden through a gastronomic buffet dinner, featuring locally inspired dishes made from sustainably grown, bred, and caught ingredients, such as organic eggs and insect-fed prawns.
  - At PASOLA Restaurant in The Ritz-Carlton Jakarta, Pacific Place, in Indonesia, the menu highlights local farmers and food artisans, celebrating the rich culinary heritage of the region.
- Transitioning to residential-sized bath amenities since 2023, preventing around 500 million small bath amenity bottles from going to landfills each year.

- Supporting sustainable activities such as renewal of fisheries in Thailand and around the world, helping to promote ecosystem resilience and protect biodiversity.

Stepping Up Social Impact

- Training over 1.2 million associates since 2016 to recognise and respond to the signs of human trafficking, including responsible recruitment.[118]
- Spending globally more than US$700 million with diverse suppliers across the Marriott portfolio in 2023.[119]
- Supporting SMEs in their transition to ESG and guiding them on the evolving demands of the market.
- Strengthening sustainability enforcement through industry-wide governance collaborations, such as the Hospitality Alliance for Responsible Procurement, a sector initiative created by several hospitality companies with a presence in at least two continents and their key global procurement organisations.
- Marriott delivers capacity-building workshops, responsible sourcing guidelines, and partnerships with NGOs to assist SMEs in strengthening their operations, enhancing their sustainability performance, and positioning themselves for long-term success in a changing market.
- Marriott engages key suppliers to undergo the EcoVadis Supply Chain Sustainability Assessment which is a platform that assesses the sustainability performance of companies and their suppliers, offering a questionnaire-based CSR assessment tool that rates organisations on four themes: Environment, Labour & Human Rights, Ethics, and Sustainable Procurement. This approach not only empowers SMEs but also contributes to a more resilient and responsible supply chain across the hospitality sector.[120]

Sustainability and ESG are integrated into Marriott International's strategies and operations through their core values and eco-tourism and community-based tourism will remain a priority for Marriott across ASEAN and around the world.

Image © Marriott

118 Marriott International (2025): 2024 Serve 360 Report: Environmental, Social & Governance Progress.
119 Marriott International (2025): 2024 Serve 360 Report: Environmental, Social & Governance Progress.
120 Marriott International (2025): 2024 Serve 360 Report: Environmental, Social & Governance Progress.

To meet such requirements from large customers, **financial institutions** have stepped in to provide sustainability-linked financing for business-facing MSMEs. **Ollo Lifestyle** is an example of an SME that has benefitted from such solutions as developed by OCBC. A provider of industrial laundry and dry-cleaning services, Ollo counts international hotel chains among its clients, laundering textiles such as hotel bedding, linens, and towels. In response to growing pressure and urgency to demonstrate its ESG credentials from clients, Ollo undertook an ESG self-assessment with **ESGpedia**. OCBC was able to use the verified emissions data from Ollo's self-assessment to structure a sustainability-linked loan, funding the capital expenditure needed for Ollo to embark on its sustainability-related initiatives while requiring Ollo to achieve a cumulative reduction of 12% of its greenhouse gas emissions intensity by 2027. Ollo has invested in RFID sensors for garments to ensure optimal drying settings, a water recycling system, and solar panels, helping to reduce energy and water consumption.

"We strongly believed that our industry can be revolutionised by creating a sustainable ecosystem with circular economy. We will persevere and build on our growth together with our partners to achieve our goals and having strong support from OCBC is essential."

Alex Teo, Managing Director, Ollo Lifestyle

Solution providers for the tourism sector

Lastly, as international hotel chains and consumers increasingly prioritise sustainability, opportunities for solution providers to support MSMEs have emerged. These providers are helping to reduce food waste and support carbon and energy management, addressing supply chain challenges and data gaps. Impact investors are also backing these efforts, encouraging solution providers to focus on the MSME and drive sustainable practices in the tourism sector.

TreeDots is a solution provider that seeks to address structural inefficiencies in the food supply chain. Backed by **Amasia, East Ventures, and Kickstart (ACTIVE Fund)**, TreeDots is a Singapore-based company building an integrated and smart supply food ecosystem, leveraging technology to match food supply and demand. Their mission is to tackle food loss by leveraging on technology to better match supply and demand and streamline transactions. Currently, systemic inefficiencies remain present in the food supply chain as they are tailored to big players, causing issues for smaller businesses in obtaining certainty in product availability, and in getting stable and competitive prices. TreeDots specialises resolving these challenges faced by the long-tail segment consisting of small businesses. TreeDots tailors its business model to address their specific purchasing behavior and operational needs. TreeDots' solution connects food producers, importers, distributors, and F&B businesses, including MSMEs, with unsold or to potential buyers, including hotels. Furthermore, TreeDots uses an in-house tech system with AI capabilities to optimise temperature-controlled logistics to increase efficiency. This model of providing logistics, platform and distribution under one platform has made TreeDots successful in operating across Indonesia, Malaysia, and Singapore, with a supplier network across 16 other countries globally.

"Essentially what we do is we divert food that is perfectly safe for consumption away from landfills, to find the right customer segments who would appreciate it. Through our ecosystem, we can ensure that goods don't reach their expiry dates, and are delivered at the right time, quality, and price to restaurants, cafes, and hotels. We're trying to solve for the supply chain distribution channel for food so suppliers can achieve their commercial goals by operating their businesses on our tech architecture and distribution ecosystem."

Tylor Jong, Co-Founder, TreeDots

Among solution providers innovating to reduce food wastage in the hospitality sector, **Winnow** is a key example. Backed by **ABC Impact**, Winnow is a global leader in AI-driven food waste reduction solutions based in London, with its advanced technology and comprehensive analytics being utilised in over 3,000 locations in almost 100 countries worldwide. Winnow's AI-enabled solutions are trained to recognise food waste in real time as it is thrown in the bin, whether during preparation or from a customer's plate. The automated recording process captures 100% of the waste stream and analytics identify and track where wastage occurs. This approach enables users to optimise efficiency, change behaviours, and drive significant waste reductions in their kitchens. On average, customers achieve a 50% reduction in food waste and cut purchasing costs by 2-8%, providing significant financial and environmental benefits. Winnow has recognised Asia as an avenue for growth and seeks to further expand in key countries like Singapore, Japan, and Indonesia.

"Food loss and wastage has a vast economic, social, and environmental impact – depleting resources, worsening global hunger, and increasing greenhouse gas emissions. The innovative AI-driven food waste management solution developed by Winnow has been successfully deployed globally and we are excited to support Winnow's growth by reaching more commercial kitchens in Asia in the coming years. When we reduce food loss and waste, we can mitigate the pressure on climate, water, and land resources – and ultimately contribute towards a more sustainable future."

Sugandhi Matta, Chief Impact Officer, ABC Impact

"On average, large-scale food service establishments such as hotels, resorts, cruise ships, and casinos waste between 5% and 15% of their food purchases—not due to negligence but because chefs must make complex forecasting decisions in high-pressure environments with limited data. The core issue is a data gap, as traditional kitchens lack real-time insights into food waste. Winnow addresses this by providing precise analytics, enabling teams to optimise production, reduce costs, and operate more sustainably."

Marc Zornes, Founder & CEO, Winnow

Image © Winnow

CONCLUSION

The tourism sector is different from the other three sectors covered in this report most fundamentally in its focus for MSMEs mainly on experiential goods and services. The presence of **consumer-facing** and **business-facing** MSMEs bring about different challenges and entails different solutions, with **capacity building in ESG practice and adoption** from industry associations and governmental agencies crucial for the former, and **supply chain partnerships and transition support** from MNC customers vital for the latter. As the region continues to attract tourists drawn to the diversity of its heritage, landscapes and culture, MSMEs face the challenge of keeping up with increasingly savvy consumers who are looking for unique experiences and products with a growing eye on sustainability. Key issues that MSMEs can tackle include food waste, community engagement, and resource efficiency. With consumer demand driving ESG prioritisation, the sector will continue to grow and MSMEs need to be supported to keep up with the pace of growth.

Afterword

One of our key motivations in embarking on this study was the concern that MSMEs would be left behind, as the global economy moved more and more towards sustainable practices.

The concept of sustainable development has been around for more than 50 years, ever since it was introduced at the first UN Conference on Human Environment in 1972. While political support for sustainability initiatives can and will change, there has been enough time for new sustainability-driven products and services to come onstream, bringing down the costs of embracing sustainable practices, and gradually making the business case for sustainable practices more and more compelling. More importantly, there has also been enough time for the impact of climate change to become much more visible, making the imperative to switch to more sustainable practices even more urgent. Hence, even if global trading patterns change and supply chains are reconfigured, there is reason to believe that sustainability considerations will still remain important.

We surveyed MSMEs on their sustainable practices, through 21 practices which we mapped to "environment", "social" and "governance" dimensions. While we knew that MSMEs had unique challenges which might make it more difficult for them to adopt ESG practices, it was sobering to quantify the gap between "awareness" and "adoption", and to break down the difficulties they encountered as they searched for the business case to adopt ESG practices.

It is tempting to wield the stick, and to focus on reminding MSMEs that despite the many stops and starts, regulations and supplier standards will catch up to them at some point. However, to make a difference, this message needs to be accompanied by constructive support. We are heartened that there are many such examples and have tried to feature many inspiring case studies in this report. We hope that these examples will motivate more to act.

The gap between ambition and implementation remains considerable, with MSMEs often constrained by cost pressures, capacity constraints, regulatory complexity, and limited access to financing. Large corporations are demanding higher environmental and social standards from their suppliers, with sustainability-linked procurement policies becoming more prevalent. At the same time, policymakers are introducing frameworks to streamline reporting requirements and support MSMEs in the transition, as seen in recent initiatives across the region. Yet, for meaningful progress to happen, this transition must be practical, scalable, and commercially viable for smaller businesses.

As we have laid out in our recommendations, there is much more to be done, many synergies which can be reaped if different actors work together. It will take a community to raise and support each MSME, especially given the challenges that will arise from an increasingly fractious and volatile global trade environment. Together, we can take action to ensure that these vital businesses are equipped to succeed in the rapidly evolving supply chain landscape. We look forward to working with like-minded partners to realise these recommendations.

Annex 1

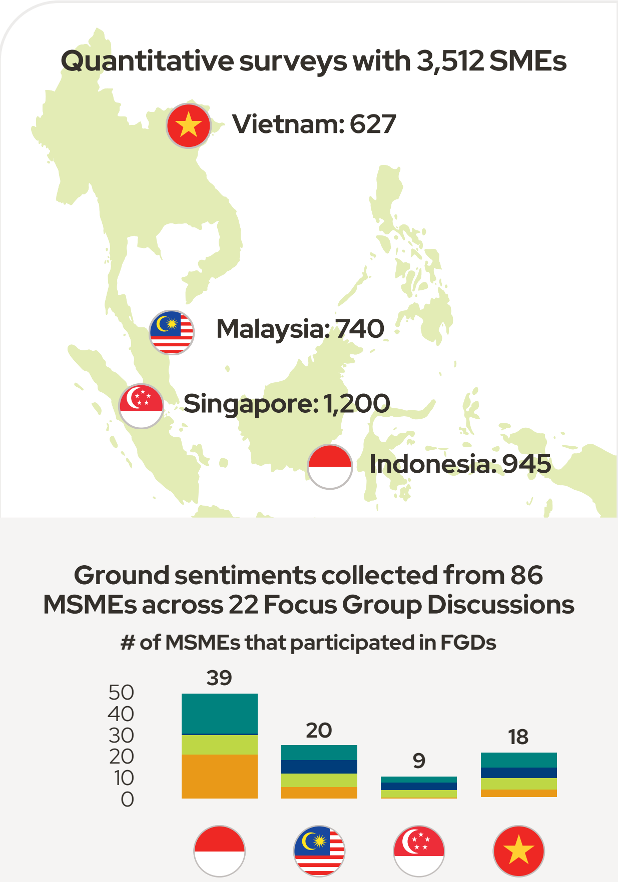
Detailed Research Methodology

This study employed a mixed methods approach that analysed both quantitative and qualitative data. The components for primary data collection and analysis included the following:

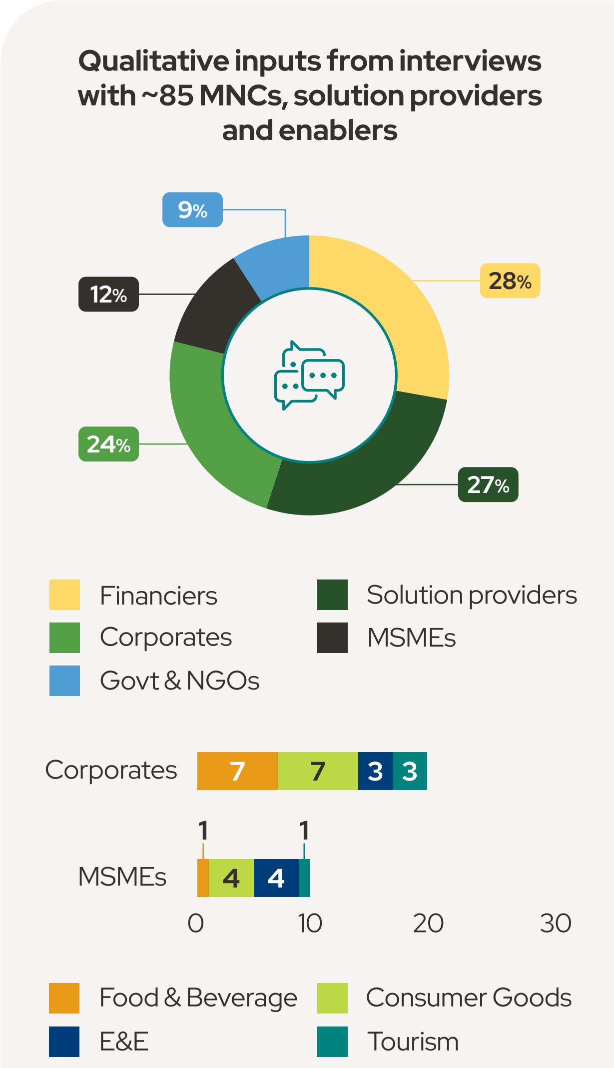
1. Quantitative inputs were collected from MSMEs via a survey that included questions on firm characteristics, awareness and understanding toward current ESG-related policies and standards, extent of implementation for ESG-related practices, perceptions of barriers and facilitators toward ESG adoption, and future plans to implement ESG and sustainability practices. MSMEs were screened for eligibility before participating in the survey, and inputs were collected from 3,512 MSMEs across four industries (consumer goods, food & beverage, electrical & electronics, and tourism) from four countries (Indonesia, Malaysia, Singapore, and Vietnam).

2. Qualitative insights were gathered via a two-pronged method. Firstly, 22 participatory, one-to-many roundtable sessions were convened to obtain group-based inputs from 86 MSMEs across the four countries and four sectors studied. In parallel, the research team also conducted in-depth, one-to-one interviews with senior managers and sector-level community representatives across 85 MNCs, solution providers, and enablers.

Figure 66: Overview of Research Approach



Consumer Goods	7	5	3	4
Food & Beverage	17	5	1	4
E&E	1	5	3	4
Tourism	14	5	2	6



MSME Survey

A core set of questions was designed inductively based on a conceptual framework derived from a scan of existing literature, such as Bloomberg Media's Sustainable Future Study,[121] Hong Kong University's Diagnostic Study for SME Sustainability Survey,[122] and Shalhoob and Hussainey's (2023) study on ESG disclosure and SME sustainability performance.[123] The country-level survey sample size was determined based on a 95% confidence level and a maximum 5% margin of error against the estimated population size of the industry sectors of interest. Separate sample sizes for sector and firm sizes were derived from locally estimated sectoral and firm-size market shares, with a minimum target of 30 firms per category.

121 Mubadala and Bloomberg Media Studios: Sustainable Future Study: Insights on where ESG investing is headed.
122 Centre for Civil Society and Governance (2022): Diagnostic study for SME sustainability survey.
123 Sustainability (2023): ESG Disclosure and the SME Sustainability Performance.

Firms were included in the study if they met their respective country's definition of an "MSME" and were engaged in business-to-business (B2B) activities, except in the tourism sector, where business-to-consumer (B2C) firms were also considered. Firms were excluded if they provided only ancillary services, such as marketing, logistics, or distribution, and were not part of the final product or service.

Given variations in economic landscapes and data availability, different sampling approaches were applied in each country to ensure statistical power and sectoral representation. Data was collected in two phases - in Phase 1, data was collected by Research For Impact (RFI, Singapore) and local partners Katadata Insight Center (KIC, Indonesia), Ernst & Young (EY, Malaysia), Blackbox Research (Singapore), and Indochina Research (IRL, Vietnam). In Phase 2, RFI conducted data cleaning, verification, and analysis to derive aggregated insights at the regional level.

Sampling was conducted from best-available sources including national databases, business associations, survey panels, and referrals. Data collection involved a combination of in-person, telephone, and online surveys, depending on the country and operational constraints. In Indonesia, face-to-face surveys was conducted in 24 provinces with a high concentration of MSMEs, supported by online and telephone surveys for remote regions. Malaysia relied heavily on an online survey platform during the initial phase, and supplemented survey recruitment with in-person and telephone interviews at relevant trade fairs and events in the later phase. In Singapore, the survey was entirely administered online through Blackbox Research's established panel of businesses. Vietnam employed a mix of online, in-person, and telephone surveys; and recruited participants through business associations, national databases, and referral networks.

To ensure the reliability and validity of the data, quality control measures were implemented post-survey across all countries. These measures included verifying respondent identity, checking for data anomalies, and conducting random validation calls. In Indonesia, for example, face-to-face surveys required geotagged photographs of respondents, while in Singapore, firms were pre-verified from an online business panel. Screening criteria were strictly enforced to ensure that all respondents met the MSME classification. Response quality was monitored for potential inconsistencies or incomplete data. Complete case analysis was employed to address any missing data, ensuring that only cases with full data across all variables were included in the analysis.

The survey data yielded descriptive statistics with a breakdown by country and sector. In addition, multivariate analysis was performed to isolate the effect of potential determinants. In overall and country-level reporting, sectors within each country were directly sampled or reweighted proportionally based on estimates of the country's industry composition. For regional and sector-specific reporting, countries were weighted in equal proportion to ensure that findings were not skewed by large economies such as Indonesia. Total sample sizes are reported for each analysis. Where questions were relevant only to specific subgroups (e.g., MSMEs that had indicated they already implement ESG practices), the reported sample size corresponds to the sample size of that subgroup.

In the primary descriptive analyses, differences in MSME-level outcomes across individual variables of interest (e.g., the extent to which MSME practices vary across different countries in the sample) were statistically assessed using standard univariate t-tests and Chi-squared tests. For key hypotheses where multiple factors may influence a single outcome, relationships were further examined using multiple linear regression to account for the effects of other explanatory variables, which may independently predict MSME practices. This analysis was conducted in both linear probability models and models with continuous outcomes. The effects were estimated using predictive margins, controlling for potential confounders, and reported as average predicted outcomes for MSMEs based on specific attributes (e.g., country, sector, or size), while holding other characteristics constant.

Sub-analysis of ESG adoption

In examining ESG adoption among MSMEs, the study focused on 21 key ESG practices across environmental, social, and governance (ESG) dimensions. These practices were selected based on their relevance to MSMEs, alignment with global sustainability frameworks, and practical feasibility for small and medium enterprises. The selection process drew from widely recognised ESG standards, including the UN Sustainable Development Goals (SDGs), Global Reporting Initiative (GRI), B Corp certification, and ASEAN's sustainability priorities, ensuring the practices assessed reflect internationally accepted principles while remaining adaptable to MSME operations. Additionally, we reviewed metrics used in pilot projects by Project Savannah, a UNDP-led initiative with the Monetary Authority of Singapore, and the Global Legal Entity Identifier Foundation, which aims to establish common ESG metrics for MSMEs and streamline sustainability reporting through technology and verified data.

Roundtable Discussions

To triangulate and deepen insights from the survey data, participatory qualitative engagements were conducted in each country. In all settings, initial survey findings were consulted to derive discussion prompts inductively, and the core roundtable protocol focused on the following three main topics:

1. Awareness of sustainability and the challenges faced,
2. Funding and support for sustainable practices, and
3. Future plans to implement sustainable practices

The roundtable engagements themselves were adapted to the local context. The roundtable participants were purposively sampled to ensure representation of each sector, with additional inclusion of respondents from cross-sectoral platforms and associations (Figure 67).

Figure 67: Roundtable final sample

		Micro and small size	Medium size
N=39	Consumer Goods	5	2
	Food & Beverage	17	
	Electrical & Electronics	1	
	Tourism	14	
N=20	Consumer Goods	5	
	Food & Beverage	5	
	Electrical & Electronics		5
	Tourism	5	
N=9	Consumer Goods	2	1
	Food & Beverage	1	
	Electrical & Electronics	3	
	Tourism		2
N=18	Consumer Goods	2	2
	Food & Beverage	3	1
	Electrical & Electronics	1	3
	Tourism	4	2

In Indonesia, five roundtable discussions were held in person across five cities (Bali, Jakarta, Medan, Semarang, and Surabaya). Three roundtable discussions were conducted in Ho Chi Minh City, Vietnam, and one roundtable discussion was held in Singapore. In these settings, a typical session lasted two to three hours and comprised six to nine participants from MSMEs purposively sampled across the industry sectors of interest. Notetakers were present for all sessions, and observers were present for selected sessions. The discussions were conducted in the local language, recorded, transcribed and translated for analysis. In Malaysia, a total of 13 discussions were conducted online , each focusing on one specific industry sector. These activities helped gather insights into ESG practices, challenges, and support needs across these four countries. Each session utilised structured discussions and thematic analysis to extract relevant findings. In total, 86 MSMEs participated in these roundtable discussions.

Aside from roundtable discussions, in-depth one-on-one interviews were also conducted with senior managers and sector-level community representatives across 85 MNCs, solution providers, and enablers to augment the qualitative inputs gathered.

Annex 2

Sampling Sizes and Strategy

Overview

The sampling strategy was designed to ensure both sufficient statistical power and representation for the industry sectors (consumer goods, food and beverage, electrical and electronics, and tourism) and firm sizes (micro, small, and medium). Each country's target total sample size was based on a 95% confidence level and a maximum 5% margin of error, incorporating in some countries, wherever possible, a buffer to account for potential operational constraints affecting recruitment.

Figure 68: Definitions of MSME by countries

	Micro	Small	Medium
	▶ Capital ≤IDR1bn OR annual sales ≤IDR2bn	▶ Capital ≤IDR5bn OR annual sales ≤IDR15bn	▶ Capital ≤IDR10bn OR annual sales ≤IDR50bn
	▶ Sales turnover <RM300k OR <5 employees	Manufacturing: ▶ Sales turnover <RM15mn OR <75 employees Services: ▶ Sales turnover <RM3mn OR <30 employees	Manufacturing: ▶ Sales turnover ≤RM50mn OR ≤200 employees Services: ▶ Sales turnover ≤RM20mn OR ≤75 employees
	▶ Operating revenue ≤SGD1mn	▶ Operating revenue ≤SGD10mn	▶ Operating revenue ≤SGD100mn OR ≤200 employees
	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND3bn revenue ▶ ≤VND3bn total capital ▶ ≤10 employees Trade & services: ▶ ≤VND10bn revenue ▶ ≤VND3bn total capital ▶ ≤10 employees	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND50bn revenue ▶ ≤VND20bn total capital ▶ ≤100 employees Trade & services: ▶ ≤VN100bn revenue ▶ ≤VND50bn total capital ▶ ≤50 employees	Agriculture, forestry, fishing industry, and construction: ▶ ≤VND200bn revenue ▶ ≤VND100bn total capital ▶ ≤200 employees Trade & services: ▶ ≤VND300bn revenue ▶ ≤VND100bn total capital ▶ ≤100 employees

Sampling Strategy for Each Country

Variations in sample composition reflect differing industry landscapes in the region, as well as estimations and assumptions necessitated by incomplete data availability. In particular, where precise data stratifying MSMEs by sector and size were unavailable, proxies such as GDP contributions served as proxies to estimate industry sizes, with the assumption that proportions of micro, small, and medium enterprises were the same across sectors. The sampling strategy for each country is detailed below.

INDONESIA

Katadata Insight Center (KIC) developed Indonesia's sampling strategy based on the estimated GDP contributions of the industry sectors and the national profile of micro, small, and medium enterprises.

a. Industry sector classification

Due to the lack of data on the number of business establishments by the industry sector, KIC first estimated the target survey sample size based on each sector's relative contribution to Indonesia's GDP.

Sector GDP share data was used for three sectors – food and beverage, electrical and electronics, and tourism. However, for the consumer goods sector, where data was unavailable, KIC estimated its contribution by comparing it to the food and beverage sector, using three primary data sources:

- Indonesia's GDP by household expenditure: To estimate the share of the consumer goods sector in household spending.
- Indonesia's consumer price index (CPI) weighting by categories: To estimate the share of the consumer goods sector in consumer spending.
- Market capitalisation share in the Jakarta Composite Index (JCI): To further estimate the consumer goods-to-food and beverage ratio.

Based on assumptions and calculations, the consumer goods-to-food and beverage ratio was calculated to range from 1:1.4 to 1:2.6, and KIC used an average ratio of 1:2 for the consumer goods sector's share relative to the food and beverage sector.

b. Enterprise size classification

Subsequently, the sample distribution by MSME size was based on Indonesia's 2021 data on the number of MSMEs at the national level:

- Micro enterprises: 63.96 million (99.6%)
- Small enterprises: 19,960 (0.3%)
- Medium enterprises: 44,730 (0.07%)

To ensure meaningful insights could still be drawn from the medium enterprise group while reflecting its relatively small share of the economy, a minimum sample size of 30 respondents was set. Actual samples reflected best-efforts recruitment by local partners, given these targets.

The actual realised sample composition for the survey is summarised below.

Figure 69: Indonesia's actual realised sample composition by industry sector and firm size

Sector	Total (n=945)	Micro firms	Small firms	Medium firms
Consumer Goods	**181**	63	90	28
Food & Beverage	**508**	227	238	43
Electrical & Electronics	**57**	11	30	16
Tourism	**199**	97	83	19
Total	**945**	**398**	**441**	**106**

MALAYSIA

Ernst & Young (EY) determined the total sample size for Malaysia based on the 2015 Department of Statistics Malaysia (DOSM) Economic Census, which recorded 907,605 MSME establishments:

- Micro enterprises: 693,670 (76.4%)
- Small enterprises: 192,783 (21.3%)
- Medium enterprises: 44,730 (2.3%)

a. Equal Sector Representation

Due to the lack of official data on the number of establishments by sector, EY applied an equal representation approach, aiming for 300 respondents per sector. To ensure meaningful insights, especially given the small share of medium enterprises, a minimum of 30 respondents per sector was set for the medium enterprise group. Actual samples reflected best-efforts recruitment by local partners, given these targets.

Figure 70: Malaysia's actual realised sample composition based on equal sector representation

Sector	Total (n=740)	Micro firms	Small firms	Medium firms
Consumer Goods	**181**	95	54	32
Food & Beverage	**185**	83	75	27
Electrical & Electronics	**185**	68	58	59
Tourism	**189**	102	63	24
Total	**740**	**348**	**250**	**142**

SINGAPORE

Similar to the approach for Indonesia, Blackbox Research referenced GDP contributions and national enterprise size data from Enterprise Singapore.

a. Industry sector classification

Due to the lack of precise data on total enterprises across certain industry sectors, the sample sizes for the sectoral subgroup were first estimated based on each sector's contribution to Singapore's GDP.

b. Enterprise size classification

The sample was further stratified by business size, based on Singapore's enterprise distribution of enterprise size according to annual revenue. Approximately 90% of the sample represented micro and small enterprises, with 10% allocated to medium enterprises. To ensure that meaningful insights could still be drawn from the medium enterprise group while reflecting its relatively small share of the economy, a minimum sample size of 30 respondents was set. Actual samples reflected best-efforts recruitment by local partners, given these targets.

The actual sample composition for the survey is summarised below.

Figure 71: Singapore's actual realised sample composition based on industry sector and firm size

Sector	Total (n=1,200)	Micro firms	Small firms	Medium firms
Consumer Goods	**447**	144	273	30
Food & Beverage	**223**	50	150	23
Electrical & Electronics	**345**	93	218	34
Tourism	**185**	60	94	31
Total	**1,200**	**347**	**735**	**118**

VIETNAM

Indochina Research Limited (IRL) determined the sample size for each firm size category in Vietnam using the number of registered businesses as a reference (Figure 72). To enhance the reliability and validity of the analysis, the sample size for medium-sized businesses was increased to 40. This adjustment ensures an equitable distribution across the four key sectors and meets the statistical requirements necessary for robust analysis.

Figure 72: Vietnam's MSME proportions

Firm size	Number of businesses	Percentage share	Proportional sample allocation	Target sample allocation
Micro	478,601	72%	431	560
Small	163,760	24%	148	
Medium	23,895	4%	21	40
Total	**666,256**	**100%**	**600**	**600**

Source: General Statistics Office and Vietnam Business Annual Report, 2022

The survey targeted a minimum of 10 medium-sized enterprises per sector. Adjustments in the target sample allocation for micro and small enterprises were based on factors beyond simple proportionality:

- The consumer goods and food and beverage sectors exhibit considerable variability in business types, necessitating a larger sample to capture diversity comprehensively.
- Similarly, the electrical and electronics sector includes a wide variety of businesses ranging from component manufacturing (e.g., semiconductors, electronic parts) to assembly and finished consumer electronics (e.g., mobile phones, televisions). This sector also includes energy management components such as batteries. The complexity and diversity within the electronics industry means that a larger sample size may be needed to capture different subsectors and types of businesses involved, ensuring a more comprehensive understanding of industry dynamics.

Actual samples reflected best-efforts recruitment by local partners, given these targets.

Figure 73: Vietnam's actual realised sample composition based on industry sector and firm size

Sector	Total (n=627)	Micro firms	Small firms	Medium firms
Consumer Goods	**157**	13	90	54
Food & Beverage	**139**	26	81	32
Electrical & Electronics	**100**	7	64	29
Tourism	**231**	64	149	18
Total	**627**	**110**	**384**	**133**

Annex 3

Sampling Frame and Data Collection Method

Overview

MSMEs were recruited from various sources, including national databases, business associations, panels, and referrals. Recruitment and data collection involved a mix of in-person, telephone, and online modalities.

The recruitment and data collection methods are summarised below, with a detailed breakdown provided for each country.

Figure 74: Sampling frame and survey modes by country

Sampling frame				
Survey panel			✓	✓
Direct recruitment (e.g., events, expos, door-to-door visits)	✓	✓		
Targeted outreach (e.g., internal contacts, government sources, business associations, professional networks, referrals, vendors)	✓	✓	✓	✓
Non-targeted outreach (e.g., blasts on online and social media)		✓		
Survey administration modes				
Online	✓	✓	✓	✓
Telephone	✓	✓		
In-person	✓	✓		✓

INDONESIA

Face-to-face recruitment for the survey was conducted across 24 provinces with the highest concentration of MSMEs. Potential respondents were sourced from:

- Badan Pusat Statistik (BPS): The national statistics office's official database contains 10,000 manufacturing companies in Indonesia.
- Kemenkop (Ministry of Cooperatives and SMEs): Lists of MSMEs supplying to state-enterprises or private firms, and those attending Kemenkop programmes.
- Partners and survey vendors: MSME lists.
- Kemenkop's national expo (May 15-17, 2024): MSMEs identified at this event.
- Door-to-door visits: Targeting local MSME hubs or areas with a high concentration of MSME businesses.

In addition, online and tele-surveys were administered to MSMEs within partner networks, those unavailable for face-to-face interviews, and those outside the 24 provinces.

KIC's interviewer teams focused on the following 24 provinces: Aceh, Bali, Bangka, Banten, Bengkulu, Central Java, East Java, East Nusa Tenggara, Jakarta, Lampung, Maluku, North Kalimantan, North Sulawesi, North Sumatra, Papua, Riau, Riau Islands, South Kalimantan, South Sulawesi, South Sumatra, West Java, West Kalimantan, West Nusa Tenggara, West Papua, and Yogyakarta.

MALAYSIA

The recruitment of MSME participants was through online surveys during the first five weeks of the survey period. Survey links were distributed through existing contact networks, business associations, government bodies, and private companies. Distribution methods included direct emails, banners on websites or apps, reposts on social media channels, and broadcasts on messaging apps such as WhatsApp and Telegram.

Noting the slow response rate, in-person surveys were implemented in-tandem from the sixth week onwards. Survey enumerators were dispatched to exhibitions and events that were relevant to the four industry sectors covered in the study. The enumerators approached businesses and asked screening questions to confirm if they were Malaysian MSMEs engaged in B2B transactions. If eligible, enumerators guided respondents through the survey using iPads, ensuring that all questions were completed before concluding the survey.

Additionally, a tele-survey method was employed to supplement in-person interviews. MSME contacts were sourced from association lists, public directories, and event contacts. Once respondents were reached by phone, enumerators introduced the study, confirmed eligibility, and conducted the survey. Enumerators ensured that all questions and fields were covered before ending each call.

SINGAPORE

Recruitment involved two primary methods:

- MSMEs were directly recruited from an established standing panel of businesses, ensuring a reliable pool of participants.
- Referrals were made based on suggestions from partners, though this approach was only activated for one case.

The survey was administered fully online.

VIETNAM

The sampling frame consisted of SMEs across the three major regions of Vietnam, ensuring both geographic and demographic diversity. A mixed-mode approach was used for recruitment, combining online and offline methods to optimize reach, respondent convenience, and data quality.

Data collection was conducted through the following four recruitment sources:

- **IRL Vietnam's in-person interviewer teams (34%):** This method focused on SMEs located in four key cities – Ha Noi, Ho Chi Minh City, Da Nang and Can Tho – where IRL Vietnam local teams were based. In-person interviews ensured high data quality through recorded interviews and verification of both business and respondent profiles, either online or via phone checks. For respondents unavailable for face-to-face interviews during fieldwork (e.g., due to business travel), online survey links were sent via phone to accommodate their availability and preferences.
- **Business associations (30%):** IRL Vietnam collaborated with business associations to reach verified professionals within their member networks. IRL Vietnam provided training on the target SME profiles and distributed survey links through the associations. This method extended the reach beyond IRL Vietnam's professional network to a broader universe of SMEs.
- **Online business panel (24%):** An online business panels helped capture responses from SMEs nationwide, especially those located outside the four major cities. IRL Vietnam worked closely with panel partners, providing training and materials to ensure sample relevance and quality.
- **Online business networks through academia (12%):** To further diversify the sample, IRL Vietnam engaged with academic partners to reach business professionals with ties to research institutions and educational networks.

All methods were kicked off at the same time to ensure timelines were met and fieldwork progressed efficiently. This multimodal, multi-source methodology maximised participation and supported robust data quality, while ensuring broad coverage of Vietnam's MSME community.

Annex 4

Survey Quality Checks

Overview

To ensure high-quality responses, survey quality checks were harmonised across participating countries to verify respondent identity, ensure proper screening, and maintain response quality.

A summary of these measures is provided in Figure 75. While core procedures were consistent, country-specific details varied slightly due to differences in survey administration modes and local conditions. These variations are outlined in the following sections.

Figure 75: Summary of measures to check survey quality

Verification of Identity	**Back-end checks:** ▶ **All:** Check for company's existence (e.g., online presence, official registers) ▶ **All:** Check for duplicated online survey entries (e.g., using IP address) ▶ **All:** Clear and complete audio recordings of tele- or in-person survey ▶ **Singapore only:** Pre-verification of firms in the panel database ▶ **Indonesia only:** Geotagged photograph of MSME respondent and interviewer for in-person surveys **Validation with participant:** ▶ **All:** Random calls to a subset of participants to ensure to verify that an enumerator conducted the tele- or in-person survey.
Screening Criteria	▶ **All:** Screening criteria clearly communicated ex-ante to data collection partners and interviewers ▶ **All:** Removal of respondents who do not meet MSME criteria in screening questions ▶ **Singapore only:** Random check of MSME's revenue to ensure alignment with MSME classification
Response Quality	▶ **All:** Removal of respondents for whom any of the following was true: ▹ Response duration is too short ▹ Have data anomalies (e.g., straight-lining) ▹ Inconsistent responses ▹ Incomplete responses

INDONESIA

For the purpose of identity verification, callbacks were conducted for 50% of the total data collected. Online data were subject to checks for duplicate entries and company names, while in-person recruitment required geotagged photographs of the MSME respondent and enumerator. Both in-person and tele surveys were validated through clear, complete audio recordings and callbacks to confirm the respondent's participation with KIC interviewers.

MALAYSIA

Random validation calls were conducted for 10% of the total respondents to verify their survey submissions.

SINGAPORE

As an online panel was used and the survey was administered fully online, the checks were performed on the backend and further included pre-verification of firms in the panel. Random checks on firm revenue were also performed to ensure alignment with the MSME classification.

VIETNAM

All online respondents were verified by checking for tax records or online presence. For telephone and in-person surveys, random checks were conducted on 30% of the audio recordings and validation calls made to 5% of the respondents.

About the Author

THE CENTRE FOR IMPACT INVESTING AND PRACTICES (CIIP)

The Centre for Impact Investing and Practices ("CIIP") fosters the growth of impact investing and practices in Asia and beyond by building and sharing knowledge, bringing together stakeholders in the community, and bringing about positive action that accelerates the adoption of impact investing principles and practices. Based in Singapore, CIIP was established in 2022 as a non-profit entity by Temasek Trust, a steward of philanthropic endowments and gifts. Temasek and ABC Impact are our strategic partners.

To achieve a sustainable future for all mankind, the world needs companies that can drive positive changes at scale through products and services. Impact investing can spur the growth of such companies and help advance solutions to address the challenges that the world faces today. We believe that sustainable companies are those who pursue social and environmental impact as avidly as they pursue profits and shareholder value. By striving to generate positive and measurable social and environmental returns alongside a financial return, both impact investors and companies can achieve returns with purpose.

We are the United Nations Development Programme (UNDP)'s Private Finance for the Sustainable Development Goals (SDGs)' anchor partner in Asia. This initiative was tasked to develop resources that accelerate investments towards achieving the UN SDGs by 2030.

For more information, visit www.ciip.com.sg.

Centre for Impact
Investing and Practices